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**SECOND QUARTER SAMPLING AND ANALYSIS REPORT**

**APRIL - JUNE 1993**

**for the**

**ITT BURBANK SITE**

**CALIFORNIA**

**VOLUME I**

**July 1993**

**SECOND QUARTER SAMPLING AND ANALYSIS REPORT**

**APRIL - JUNE 1993**

**for the**

**ITT BURBANK SITE**

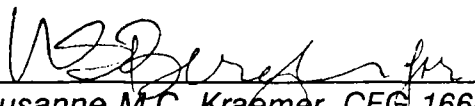
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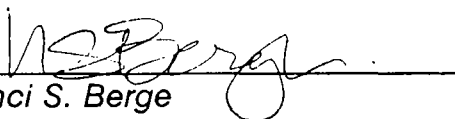
**VOLUME I**

**Prepared by:**

**ICF Kaiser Engineers  
10 Universal City Plaza, Suite 2400  
Universal City, California**

**July 1993**

  
Susanne M.C. Kraemer, CEG 1666  
Project Manager

  
Nanci S. Berge  
Project Geologist



2166-06191  
ITT Aerospace Controls  
Division

ITT Fluid Technology  
Corporation

July 26, 1993

Mr. Gregg Kwey  
Senior Water Resource Control Engineer  
California Regional Water Quality Control Board  
Los Angeles Region  
101 Centre Plaza Drive  
Monterey Park, California 91754-2156

WELL INVESTIGATIONS PROGRAM - SUPPLEMENTARY SUBSURFACE  
INVESTIGATION (FILE NO. 104.0582)

Dear Mr. Kwey:

Enclosed please find three copies of the "Second Quarter Sampling and Analysis Report, April-June 1993 for the ITT Aerospace Controls Site Burbank, California" for your review. This report summarizes groundwater data collected this past quarter.

Please note that beginning with this reporting period, data will be submitted in the format as requested in your correspondence of June 29, 1993 (Appendix D, Laboratory Report Form 10A and 10B). The enclosed report presents the data in this format as Volume II. Also effective this reporting period, and based on approval received from Ms. Gale Madyun and Mr. Eric Nupen during our meeting on April 29, 1993, site wide activities will be submitted to the Board under separate cover.

As is customary, changes that we are recommending in the sampling program are outlined in Section 4 of the enclosed report. Please note that we are requesting your comments and or approval regarding these proposed changes to the sampling program. Should you have any questions or comments, please feel free to contact me at (818) 953-2119.

Yours Truly,  
ITT Aerospace Controls

Teresa P. Olmsted  
Manager, Environmental Projects

cc: A. Veloz - LARWQCB  
P. Kani - LAFD-DOHS  
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## 1.0 INTRODUCTION

This report summarizes the results of the quarterly groundwater monitoring period covering April through June 1993 for the ITT Burbank site in Burbank, California. The work was conducted and the Second Quarter report prepared in response to the letter request from the Los Angeles Regional Water Quality Control Board (LARWQCB, 1990) dated August 16, 1990 as part of the Well Investigation Program (File No. 104.0582).

This report summarizes the ninth round of groundwater samples collected at the ITT Burbank site. Groundwater samples have been collected on a quarterly basis for approximately two and a half years (since January 1991). The groundwater data have been relatively consistent, as any changes detected in individual parameter concentrations have been within an order of magnitude each sampling round, with few exceptions.

The sampling activities were performed according to the "Preliminary Work Plan For Soils and Groundwater Characterization for ITT Burbank Aerospace Controls," (Weston, 1990) submitted to the LARWQCB on November 12, 1990. Samples were analyzed in accordance with the recommended analytical program presented in the "First Quarter Sampling and Analysis Report," (ICF KE, 1993).

## **2.0 POTENTIOMETRIC DATA**

Groundwater elevations were measured on April 15, May 11 and June 8, 1993. Two monitoring wells (PW-2, PW-3), which are located on the northeast portion of the site, are completed in what appears to be a perched groundwater zone. The remaining six monitoring wells (PW-1, PW-4, PW-5, PW-6, SW-1 and SW-2) are completed in the upper water-bearing zone. A complete tabulation of groundwater measurements and hydrographs for each well are included in Appendix A.

During this monitoring period, separate-phase material was detected in wells SW-1 and SW-2 and, during the June gauging, in well PW-2. The groundwater elevations and separate-phase material thicknesses are presented in Appendix A. As in previous sampling rounds, because of the density differences, the thickness of this separate-phase material has been used to correct the measured groundwater elevations in those wells. Separate-phase material under the ITT Burbank site appears to be associated with the petroleum releases currently under investigation at the neighboring Interstate Brands Corporation (IBC) site. Onsite wells will continue to be monitored for separate-phase material.

Due to the downhole dedicated pump systems, the total depths of the wells were not monitored regularly for minor siltation. Total depth of well gauging will be conducted and documented if siltation becomes significant.

### **2.1 PERCHED GROUNDWATER ZONE**

Perched groundwater (PW-2, PW-3) was encountered in the northeastern portion of the site at depths of approximately 35 and 43 feet below ground surface, respectively. The groundwater elevations of the perched zone and the approximated contours are depicted on Figures 2-1 through 2-3. The contours are based on two data points and similar trends observed in the same water-bearing zone at the adjacent IBC site. The perched zone contours show the same general southerly flow direction during this monitoring period. These flow directions appear consistent with the directions observed in previous quarters.

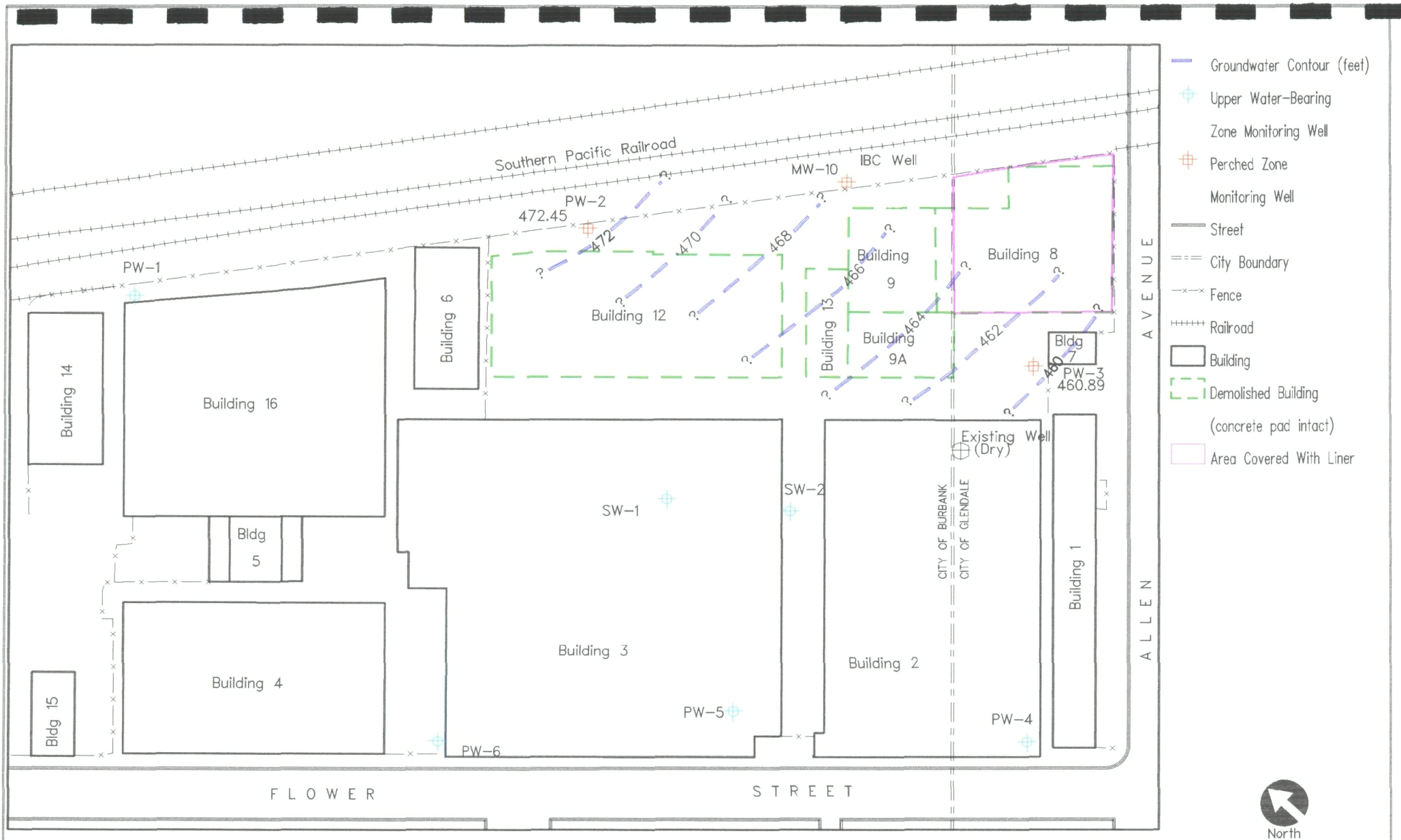


Figure 2-1: Groundwater Elevation Map for  
Perched Water-Bearing Zone, April 15, 1993  
ITT Site, Burbank, CA

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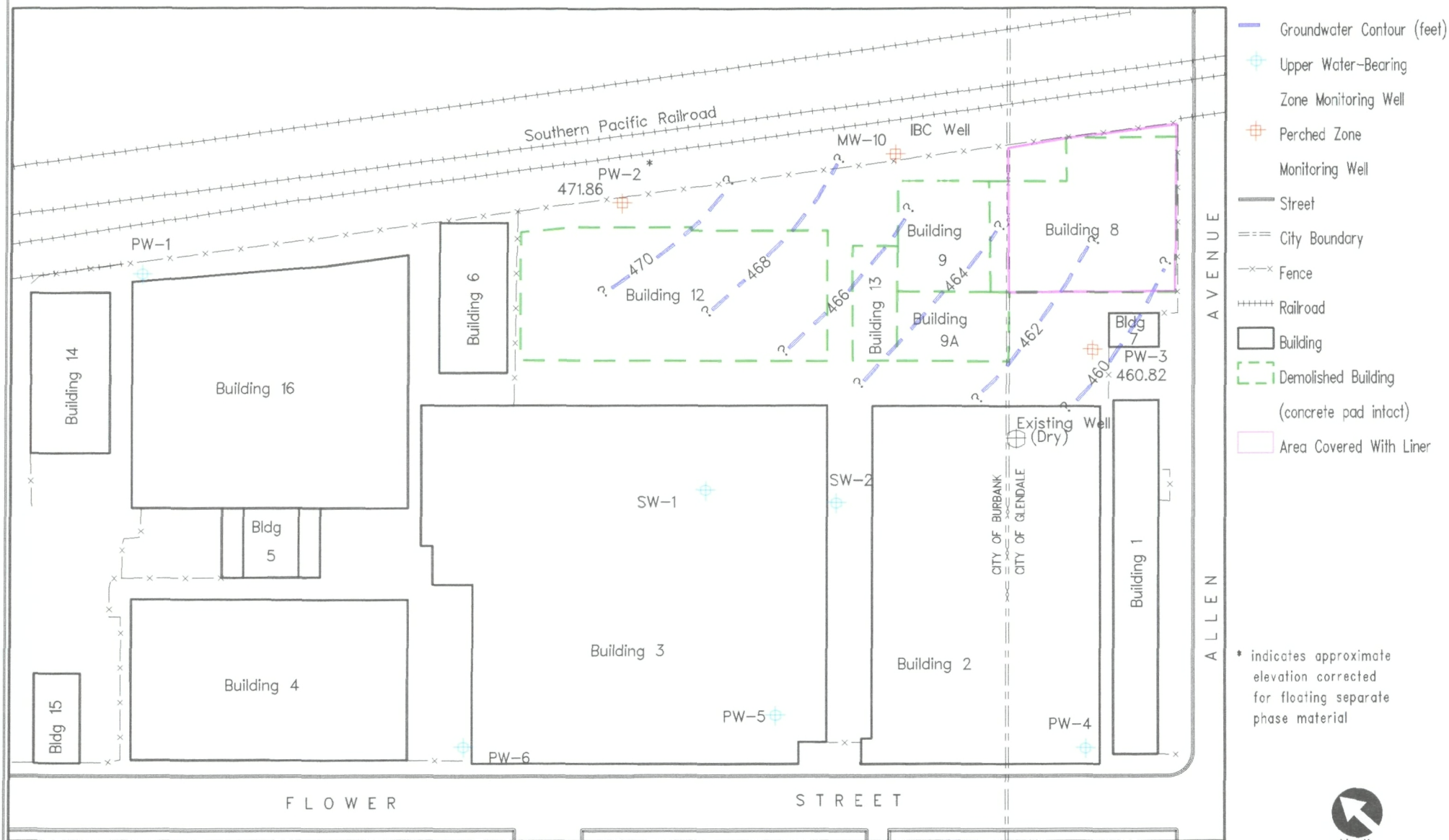


Figure 2-3: Groundwater Elevation Map for Perched Water-Bearing Zone, June 8, 1993  
ITT Site, Burbank, CA



The estimated hydraulic gradient for this perched zone at the site averaged 0.026 ft/ft over the April-to-June monitoring period.

Since monitoring began in February 1991, the perched groundwater elevations have appeared to fluctuate with the rainfall pattern. Hydrographs of groundwater elevations for PW-2 and PW-3 show increases in elevations from the December 28, 1992 measurements of 470.13 and 458.93 feet, respectively. The highest groundwater elevation measurements were collected for PW-2 on March 25, 1993 at 472.74 feet, and for PW-3 on April 15, 1993 at 460.87 feet. Groundwater measurements during this monitoring period indicate groundwater elevations in the perched zone decreased in both PW-2 and PW-3 on June 8, 1993 to 471.85 and 460.82 feet, respectively.

## **2.2 UPPER WATER-BEARING ZONE**

Hydrographs for the six upper water-bearing wells (PW-1, PW-4, PW-5, PW-6, SW-1, and SW-2) also indicate overall increases in groundwater elevations since December 28, 1992. Elevations continued to rise through the June 8, 1993 measurement except for PW-5, which decreased from May 11 to June 8, 1993. During this monitoring period the largest rise in groundwater elevation was observed in PW-5, which increased 3.35 feet between April 15 and May 11, 1993.

The hydrographs show that the groundwater levels for the upper water-bearing zone have recovered to the levels measured when the wells were first installed, reflecting recent recharge from above-normal rainfall during the past winter season.

Groundwater elevations of the upper water-bearing zone for the three gauging events this quarter are shown on Figure 2-4. Based on the observed groundwater elevations in SW-1, SW-2, PW-5, PW-6 and PW-1, the groundwater appears to flow to the north, opposing the regional flow trend which is to the south. However, the flow pattern is to the east based on the groundwater elevations observed in wells SW-2, PW-5 and PW-4. These anomalous flow patterns have been observed during the previous periods.

The presence of separate floating-phase material in the groundwater beneath the site continues to be a factor in the variability of the groundwater elevations for SW-1 and SW-2.

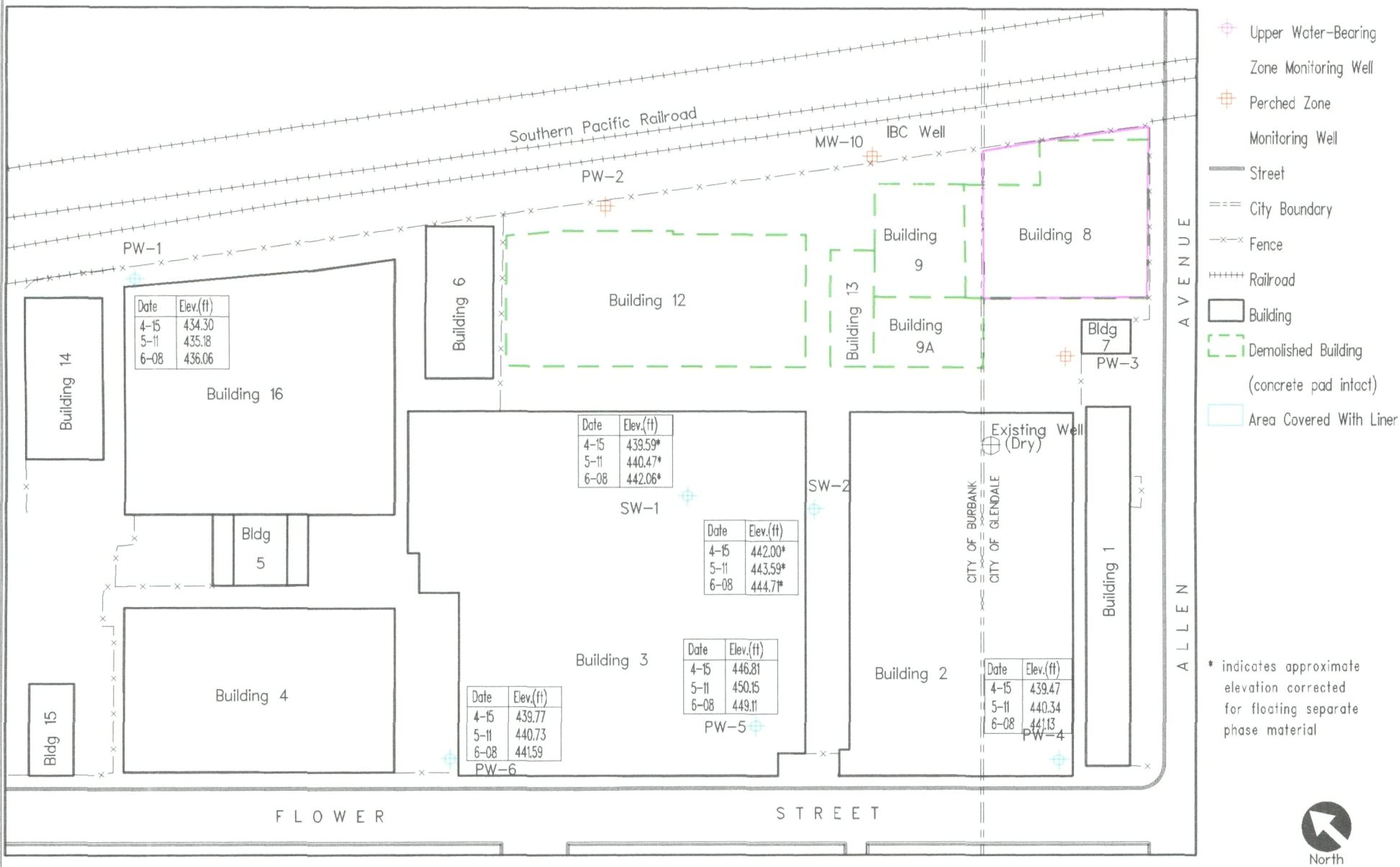
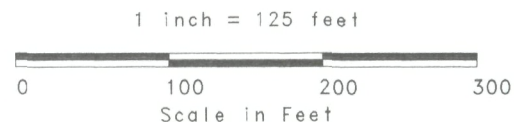


Figure 2-4: Groundwater Elevations for the Upper Water-Bearing Zone, Second Quarter, 1993 ITT Site, Burbank, CA



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During the past six monitoring periods, the thickness of the floating product was measured to correct the measured groundwater elevation. However, even with the corrected groundwater elevations, the groundwater flow direction anomalies of the site still exist. PW-1 and SW-2 were redeveloped in March to increase hydraulic connection with the aquifer. However, groundwater gradients have not changed as a result of the redevelopment.

The groundwater gradient observed during the second quarter 1993 in the upper water-bearing zone in the northern portion of the site was from 0.013 to 0.042 ft/ft to the north. The gradient on the southern end of the site was approximately 0.037 ft/ft based on three data points, and appeared to be toward the east. In the vicinity of the site, steep gradients have been identified in the regional study of the basin for EPA's Remedial Investigation Report (JMM, 1992) that are similar to groundwater contours south of the Raymond Fault. A fault has been postulated in the alluvium and a possible impediment to groundwater flow may occur in this area.

### 3.0 RESULTS OF QUARTERLY GROUNDWATER QUALITY

#### 3.1 GROUNDWATER SAMPLING AND ANALYSIS

Eight monitoring wells have been installed at the ITT Burbank site: two wells appear to monitor a perched groundwater zone present on the eastern portion of the site (PW-2 and PW-3), and six wells monitor the upper water-bearing zone (PW-1, PW-4, PW-5, PW-6, SW-1, and SW-2). PW-1, in the north corner of the site, is assumed to characterize the regional water quality in the upper water-bearing zone in the area. PW-2 monitors the quality of perched groundwater flowing from the IBC site northeast of the ITT Burbank site. The June 1993 sampling event was the ninth round of quarterly groundwater sampling for wells PW-1 through PW-4 and PW-6, and the eighth round for SW-1, SW-2 and PW-5.

Groundwater samples were collected in June 1993 for this monitoring period from all onsite monitoring wells. These samples were analyzed for the following parameters, based on the recommendations proposed in the "First Quarter Sampling and Analysis Report" (ICF KE, 1993), and in response to the letter request from the LARWQCB dated August 16, 1990, item III 0, as part of the Well Investigation Program (File No. 104.0582):

<u>Parameter</u>	<u>EPA Method</u>	<u>Wells to be Sampled</u>
VOCs	524.2	All wells.
Diesel fuel	Modified 8015	PW-2, PW-3, PW-4, PW-5, SW-1, SW-2.
Total Recoverable Petroleum Hydrocarbons (TRPH)	418.1	PW-2, PW-3, PW-4, PW-5, SW-1, SW-2.
Turbidity	180.1	All wells.
Nitrogen (NO <sub>2</sub> , NO <sub>3</sub> )	300	All upper water-bearing wells.
Ammonia (NH <sub>3</sub> )	350.2	All upper water-bearing wells.
Hexavalent Chromium	SM 3500	PW-4, PW-5
Total Chromium	6010	PW-1, PW-4, PW-5, PW-6
Nickel	6010	PW-1, PW-4, PW-6
Polychlorinated Biphenyls	8080	PW-3

## **3.2 GROUNDWATER QUALITY - ORGANIC**

This section discusses the organic groundwater quality data for the ITT Burbank site for the monitoring period of April through June 1993. The groundwater samples were collected June 8-11, 1993. The organic data are tabulated along with previous groundwater quality data in Table 3-1 and are described briefly below. Groundwater screening data from Hydropunch samples collected in February and March 1991 are presented in Appendix D.

Volatile organic compounds (VOCs) were the primary compounds detected in groundwater. As in the previous sampling periods, the most prevalent VOCs detected in June 1993 were TCE, 1,1,1-TCA, 1,1-DCA and 1,1-DCE in the upper water-bearing zone, while TRPH (as diesel) remained the primary compound detected in the perched zone. As in previous sampling periods, the TRPH (as diesel), was also present in the upper water-bearing zone wells SW-1 and SW-2.

### **3.2.1 Perched Groundwater Zone**

#### **VOCs**

June 1993 groundwater VOC data for the perched water zone in the eastern portion of the site were consistent with previously observed results. VOC levels in samples from the perched monitoring well, PW-2, were again higher than those detected in PW-3, indicating a potential off-site source. The June 1993 TCE levels detected in PW-2 and PW-3 were 4.9 and 4.4  $\mu\text{g/L}$ , respectively, and for cis-1,2-DCE, 48 and 0.6  $\mu\text{g/L}$ , respectively. Naphthalene was detected in PW-2 at 7.6  $\mu\text{g/L}$  and in PW-3 at 0.9  $\mu\text{g/L}$ . Levels of 1,1,1-TCA, 1,1-DCA and 1,1-DCE were detected in PW-2 at concentrations of 1.5, 14 and 24  $\mu\text{g/L}$ , respectively; none of these compounds were detected in PW-3. Other VOCs detected at trace levels in these two wells are listed in Table 3-1.

#### **Diesel and TRPH**

The concentration of diesel (total extractable petroleum hydrocarbons as diesel measured by modified EPA Method 8015) in perched monitoring well PW-2, downgradient of IBC (upgradient to the ITT Burbank site) was 1,700  $\mu\text{g/L}$  in the June 1993 sample as

Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs

GROUND WATER SAMPLE ID	DATE SAMPLED	Benzene	Bromo-dichloro-methane	Bromo-form	n-Butyl-benzene	sec-Butyl-benzene	tert-Butyl-benzene	Carbon-tetra chloride	Chloro-benzene	Chloro-ethane	Chloroform
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PW-1-01	3/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-1-02	7/25/91	1.4	1.7	2.8	ND	ND	ND	0.8	0.5	ND	8
PW-1-03	11/14/91	1.2	0.7	ND	ND	ND	ND	0.7	0.5	ND	17 B
PW-1-04	3/5/92	ND	ND	ND	ND	ND	ND	0.8	0.5	ND	9 J,B
PW-1-05	6/2/92	1.1	0.6	ND	ND	ND	ND	ND	0.4 J	ND	5.9
PW-1-06	8/18/92	1.1	0.5 J	ND	ND	ND	ND	0.8	0.3 J	ND	5.8
PW-1-07	11/23/92	1	0.4 J	ND	ND	ND	ND	0.5 J	0.5	ND	6.4
PW-1-08	3/05/93	1.3	0.6	ND	ND	ND	ND	0.8	0.6	ND	7.4
PW-1-09	6/8/93	ND	0.9	ND	ND	ND	ND	0.8	0.8	ND	7.6
PW-2-01	3/15/91	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-2D-01	3/15/91	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-2-02	7/22/91	0.6	0.5	ND	0.8	1.9	0.2 J	ND	ND	0.1 J	0.6
PW-2-03	11/14/91	0.5	ND	ND	ND	1.2	0.2 J	ND	ND	0.3 J	0.3 J,B
PW-2-04	3/4/92	0.6	ND	ND	ND	1.6	0.3 J	ND	ND	ND	ND B
PW-2-05	6/3/92	ND	ND	ND	0.9	1.3	ND	ND	ND	0.4 J	ND
PW-2-06	8/19/92	0.2 J	ND	ND	1.8	2.5	0.2 J	ND	ND	ND	ND
PW-2-07	11/20/92	ND	ND	ND	1.4	2.1	0.2 J	ND	ND	ND	ND
PW-2D-07	11/20/92	ND	ND	ND	1.5	2.1	0.2 J	ND	ND	ND	ND
PW-2-08	3/04/93	0.5	ND	ND	2	2.3	ND	ND	ND	ND	ND
PW-2-09	6/10/93	ND	ND	ND	1.5	2.3	ND	ND	ND	0.9	ND
PW-3-01	3/19/91	0.3	ND	ND	ND	ND	ND	ND	ND	ND	2.7
PW-3-02	7/25/91	0.3 J	ND	0.4 J	ND	0.3 J	ND	ND	ND	ND	0.8
PW-3-03	11/15/91	0.3 J	ND	ND	ND	0.2 J	ND	ND	ND	ND	0.5 B
PW-3-04	3/3/92	ND	ND	ND	ND	0.1 J	ND	ND	ND	ND	0.4 J,B
PW-3-05	6/2/92	0.2 J	ND	ND	ND	0.2 J	ND	ND	ND	ND	ND
PW-3-06	8/19/92	0.3 J	ND	ND	ND	0.2 J	ND	ND	ND	ND	ND
PW-3-07	11/20/92	0.3 J	ND	ND	ND	0.2 J	ND	ND	ND	ND	0.3 J
PW-3-08	3/02/93	0.4 J	ND	ND	ND	0.3 J	ND	ND	ND	ND	1.8
PW-3-09	6/11/93	ND	ND	ND	ND	0.6	ND	ND	ND	ND	0.6
PW-4-01	3/15/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-4-02	7/25/91	1.2	3.2	ND	ND	ND	ND	31	ND	ND	18
PW-4-03	11/21/91	1.8	0.3 J	ND	ND	ND	ND	22	ND	0.2 J	19
PW-4-04	3/5/92	ND	ND	ND	ND	ND	ND	29	ND	ND	31
PW-4-05	6/3/92	ND	ND	ND	ND	ND	ND	33	ND	ND	19
PW-4-06	8/19/92	1.2	ND	ND	ND	ND	ND	27	ND	ND	16
PW-4-07	11/18/92	1.2	ND	ND	ND	ND	ND	26	ND	ND	17
PW-4-08	3/03/93	0.9	ND	ND	ND	ND	ND	30	ND	ND	20
PW-4-09	6/9/93	1.0	ND	ND	ND	ND	ND	28	ND	ND	21

Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs

GROUND WATER SAMPLE ID	DATE SAMPLED	Benzene	Bromo-dichloro-methane	Bromo-form	n-Butyl-benzene	sec-Butyl-benzene	tert-Butyl-benzene	Carbon-tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PW-5-02	7/25/91	4	1.2	ND	ND	ND	ND	4.5	ND	ND	43
PW-5-03	11/21/91	2.8	0.9	ND	ND	ND	ND	4.6	ND	ND	58
PW-5-04	3/6/92	2.7	0.9	ND	ND	ND	ND	5.5	ND	ND	66 B
PW-5-05	6/3/92	2.7	ND	ND	ND	ND	ND	ND	ND	ND	100
PW-5-06	8/19/92	1.2	0.2 J	ND	ND	ND	ND	4.7	ND	ND	73
PW-5-07	11/20/92	2.4	0.8	ND	ND	ND	ND	3.8	ND	ND	67
PW-5-08	3/03/93	2.6	0.8	ND	ND	ND	ND	4.1	ND	ND	79
PW-5-09	6/11/93	3.3	0.9	ND	ND	ND	ND	4.8	ND	ND	71
PW-5D-09	6/11/93	3.0	0.8	ND	ND	ND	ND	4.2	ND	ND	38
PW-6-01	3/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-6-02	7/23/91	0.6	ND	ND	ND	ND	ND	0.3 J	ND	ND	3.4
PW-6-03	11/14/91	0.3 J	ND	ND	ND	ND	ND	0.5	0.1 J	ND	23 B
PW-6-04	3/5/92	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3 B
PW-6-05	6/2/92	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	5.5
PW-6-06	8/19/92	0.4 J	ND	ND	ND	ND	0.2 J	ND	ND	ND	4.9
PW-6-07	11/20/92	ND	ND	ND	ND	ND	ND	0.4 J	ND	ND	3.3
PW-6-08	3/02/93	0.5 J	ND	ND	ND	ND	ND	0.4 J	ND	ND	4.9
PW-6-09	6/8/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.6
SW-1-02	7/24/91	4.4	2.2	ND	1.1	1.1	ND	14	ND	ND	20
SW-1-03	11/21/91	2.2	1.3	ND	ND	0.3 J	ND	11	ND	ND	13
SW-1D-03	11/21/91	10	1.2	ND	ND	0.3 J	ND	11	ND	ND	13
SW-1-04	3/4/92	5.5	2.3	ND	ND	0.8	ND	14	ND	ND	100 B
SW-1-05	6/3/92	6.6	1.9	ND	0.7	0.7	ND	16	0.1 J	ND	23
SW-1D-05	6/3/92	6.2	2.3	ND	0.7	0.6	ND	15	0.1 J	ND	22
SW-1-06	8/20/92	ND	2.1	ND	1.2	0.9	ND	ND	ND	ND	19
SW-1-07	11/19/92	6.6	2.3	ND	1.2	0.8	ND	8.5	ND	ND	21
SW-1-08	3/04/93	6.7	2.3	ND	1.9	1.6	ND	12	ND	ND	24
SW-1D-08	3/04/93	6.8	2.4	ND	2.2	1.6	ND	12	ND	ND	24
SW-1-09	6/10/93	6.6	2	0.8	ND	2.2	4.5	0.6	ND	ND	27
SW-2-02	7/24/91	22	0.9	ND	1.9	1.5	ND	42	ND	ND	210
SW-2D-02	7/24/91	24	0.9	ND	2.3	2	ND	41	ND	ND	200
SW-2-03	11/15/91	28	1	ND	1.4	1.7	ND	35	ND	0.2 J	230 B
SW-2-04	3/6/92	33	1.2	ND	1.5	1.9	ND	19	ND	ND	270 B
SW-2D-04	3/6/92	24	1.2	ND	1.6	2	ND	19	ND	ND	270 B
SW-2-05	6/4/92	24	ND	ND	1.4	1.7	2.9	20	ND	ND	230
SW-2-06	8/20/92	21	ND	ND	2	2	ND	14	ND	ND	140
SW-2D-06	8/20/92	21	ND	ND	1.9	2	ND	15	ND	ND	140
SW-2-07	11/19/92	21	0.5 J	ND	1.7	1.9	ND	10	ND	ND	160
SW-2-08	3/04/93	20	ND	ND	1.9	2.6	ND	10	ND	ND	200
SW-2-09	6/10/93	25	ND	ND	2	2.8	4.3	2.2	ND	0.6	240

Notes: ND: Compound not detecte (-): Compound not analyzed.

(\*): Duplicate sample of PW-3 was analyzed for PCB's--both were non-detect.

(+): Rounded to the nearest tens

J: Compound detected at a level less than the quantitation limit.

B: Compound detected in either field equipment blank or method blank.

TRPH: Total recoverable petroleum hydrocarbons by EPA Method 418.1.

Diesel: Measured by modified EPA Method 8015.

Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-0

Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs (Cont.)

GROUND WATER SAMPLE ID	Chloro- methane	Dibromo- chloro- methane	1,2-Di- chloro- benzene	1,3-Di- chloro- benzene	1,4-Di- chloro- benzene	Dichloro- difluoro- methane	1,1-Di- chloro- ethane (1,1 DCA)	1,2-Di- chloro- ethane (1,2 DCA)	1,1-Di- chloro- ethene (1,1 DCE)	cis-1,2 Dichloro- ethene	trans-1,2 Dichloro- ethene
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PW-1-01	ND	ND	ND	ND	ND	ND	50	ND	460	20	ND
PW-1-02	ND	2.3	ND	ND	ND	2.3	110	31	2,900	50	26
PW-1-03	ND	ND	ND	ND	ND B	ND	130	31	1,900	43	28
PW-1-04	ND	ND	ND	ND	10 B	1.6	82	27	1,200	37	23
PW-1-05	ND	ND	ND	ND	ND	1.0	150	ND	3,800	48	52
PW-1-06	ND	ND	ND	ND	ND B	ND	97	27	2,300	33	21
PW-1-07	ND	ND	ND	ND	ND	ND	94	28	1,900	31	20
PW-1-08	ND	ND	ND	ND	0.6 B	ND	180	32	3,400	40	32
PW-1-09	ND	ND	ND	ND	ND	ND	130	33	3,000	47	30
PW-2-01	ND	ND	ND	ND	ND	ND	3.1	ND	1.5	5.8	ND
PW-2D-01	ND	ND	ND	ND	ND	ND	3.2	ND	1.3	5.6	ND
PW-2-02	ND	ND	0.4 J	ND	ND	ND	4.4	ND	2.7	4.6	0.4
PW-2-03	ND	ND	ND	ND	ND B	ND	6.3	ND	2.7	5.5	0.2 J
PW-2-04	ND	ND	ND	ND	ND B	ND	3.1	0.4 J	6.5	29	0.2 J
PW-2-05	ND	ND	ND	ND	ND	ND	8.8	ND	5.2	38	ND
PW-2-06	ND	ND	ND	ND	ND B	ND	6.5	ND	3.6	29	ND
PW-2-07	ND	ND	ND	ND	ND	ND	7.5	ND	9.5	30	0.2 J
PW-2D-07	ND	ND	ND	ND	0.1 J	ND	8	ND	9.8	30	0.2 J
PW-2-08	ND	ND	ND	ND	0.2 J,B	ND	11	ND	22	29	0.4 J
PW-2-09	ND	ND	ND	ND	ND	ND	14	ND	24	48	0.6
PW-3-01	ND	ND	ND	ND	ND	ND	3.1	ND	ND	ND	ND
PW-3-02	ND	ND	ND	ND	ND	ND	0.4 J	0.9	ND	ND	ND
PW-3-03	ND	ND	ND	ND	ND B	ND	0.4 J	1	ND	0.2 J	ND
PW-3-04	ND	ND	ND	ND	ND B	ND	ND	1.2	ND	ND	ND
PW-3-05	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND
PW-3-06	ND	ND	ND	ND	ND B	ND	0.2 J	0.1 J	ND	ND	ND
PW-3-07	ND	ND	ND	ND	0.1 J	ND	0.2 J	ND	ND	0.4 J	ND
PW-3-08	ND	ND	ND	ND	0.2 J,B	ND	0.4 J	ND	ND	4.8	ND
PW-3-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	ND
PW-4-01	ND	ND	ND	ND	ND	ND	20	ND	350	10	ND
PW-4-02	ND	ND	ND	ND	ND	0.2 J	39	3	1,300	26	6
PW-4-03	ND	ND	ND	ND	42 B	ND	110	4.1	1,400	35	19
PW-4-04	ND	ND	ND	ND	ND B	ND	52	3.9	1,000	34	7.3
PW-4-05	ND	ND	ND	ND	ND	ND	100	3.8	1,900	29	7.4
PW-4-06	ND	ND	ND	ND	ND B	ND	36	3.2	1,000	20	5.1
PW-4-07	ND	ND	ND	ND	ND	ND	41	3.8	1,200	23	6.4
PW-4-08	ND	ND	ND	ND	0.2 J,B	ND	30	4.2	970	18	4.6
PW-4-09	ND	ND	ND	ND	ND	ND	29	ND	430	20	2.5

Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs (Cont.)

GROUND WATER SAMPLE ID	Chloro-methane	Dibromo-chloro-methane	1,2-Di-chloro-benzene	1,3-Di-chloro-benzene	1,4-Di-chloro-benzene	Dichloro-difluoro-methane	1,1-Di-chloro-ethane (1,1 DCA)	1,2-Di-chloro-ethane (1,2 DCA)	1,1-Di-chloro-ethene (1,1 DCE)	cis-1,2 Dichloro-ethene	trans-1,2 Dichloro-ethene
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PW-5-02	ND	0.6	ND	ND	ND	ND	92	10	810	42	2.9
PW-5-03	0.2 J,B	ND	ND	ND	8.9 B	ND	130	13	380	46	5.2
PW-5-04	ND	ND	ND	ND	ND B	ND	83	13	390	49	2.2
PW-5-05	ND	ND	ND	ND	ND	ND	170	ND	1,100	63	2.9
PW-5-06	ND	ND	ND	ND	ND B	ND	110	13	570	39	2.1
PW-5-07	ND	ND	ND	ND	ND	ND	110	13	540	36	2.1
PW-5-08	ND	ND	ND	ND	0.3 J,B	ND	130	13	740	40	2.6
PW-5-09	ND	ND	ND	ND	ND	ND	130	ND	1,100	52	3.0
PW-5D-09	ND	ND	ND	ND	ND	ND	64	9.1	160	27	2.6
PW-6-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-6-02	ND	ND	ND	ND	ND	ND	16	0.3 J	140	10	2.4
PW-6-03	ND	ND	ND	ND	26 B	ND	11 J	0.2 J	260	9	2.2
PW-6-04	ND	ND	ND	ND	110 J,B	ND	3.3	ND	78	8	1.5
PW-6-05	ND	ND	ND	ND	ND	0.2 J	13	ND	630	43	4.3
PW-6-06	ND	ND	ND	ND	ND B	ND	11	ND	280	10	2.7
PW-6-07	ND	ND	ND	ND	ND	ND	6.4	ND	180	11	2.8
PW-6-08	ND	ND	ND	ND	0.2 J,B	ND	14	ND	320	12	3.5
PW-6-09	ND	ND	ND	ND	ND	ND	16	ND	340	13	3.2
SW-1-02	ND	ND	ND	ND	ND	ND	210	ND	3,300	71	20
SW-1-03	ND	ND	ND	ND	59 B	ND	200	ND	740	39	3.8
SW-1D-03	ND	0.8	ND	ND	48 B	ND	190	ND	710	37	7.9
SW-1-04	ND	1.9	ND	ND	10 J,B	ND	160	ND	1,700	78	14
SW-1-05	ND	2.3	ND	0.2 J	0.2 J	ND	470	ND	4,100	340	14
SW-1D-05	ND	2.2	ND	0.2 J	0.2 J	ND	360	ND	3,600	340	14
SW-1-06	ND	2.8	0.3 J	ND	0.1 J,B	ND	300	ND	2,400	66	7
SW-1-07	ND	ND	0.1 J	ND	ND	ND	360	11	2,600	76	7.2
SW-1-08	ND	ND	ND	ND	0.3 J,B	ND	510	11	3,800	100	8
SW-1D-08	ND	ND	ND	ND	0.4 J,B	ND	520	11	3,600	110	7.9
SW-1-09	ND	2.9	0.6	ND	ND	ND	760	18	4,900	140	15
SW-2-02	ND	ND	ND	ND	ND	ND	430	ND	1,000	840	4.6
SW-2D-02	ND	ND	ND	ND	ND	ND	420	ND	1,100	840	5.2
SW-2-03	ND	ND	ND	ND	26 B	ND	480	ND	1,100	790	5.4
SW-2-04	ND	ND	ND	ND	22 J,B	0.4 J	470	ND	1,200	1,100	2.2
SW-2D-04	ND	ND	ND	ND	120 J,B	0.4 J	170	ND	1,200	1,100	2.7
SW-2-05	ND	ND	ND	0.2 J	0.1 J	0.2 J	680	ND	1,600	890	4.1
SW-2-06	ND	ND	ND	ND	ND B	ND	400	4.2	810	640	3.5
SW-2D-06	ND	ND	ND	ND	ND B	ND	410	4.2	820	660	4
SW-2-07	ND	ND	ND	ND	ND	ND	450	ND	820	730	3.2
SW-2-08	ND	ND	ND	ND	0.2 J,B	ND	550	5.8	1,000	1,000	4
SW-2-09	ND	ND	ND	ND	ND	ND	650	4.8	780	2,300	ND

Note ND: Compound not detected. (-): Compound not analyzed.

(\*): Duplicate sample of PW-3 was analyzed for PCB's--both were non-detect.

(+): Rounded to the nearest tens

J: Compound detected at a level less than the quantitation limit.

B: Compound detected in either field equipment blank or method blank.

TRPH: Total recoverable petroleum hydrocarbons by EPA Method 418.1.

Diesel: Measured by modified EPA Method 8015.

5. Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-05.

Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs (Cont.)

GROUND WATER SAMPLE ID	Ethyl- benzene	Iso- propyl- benzene	p-Iso- propyl- toluene	Methylene Chloride	Naptha- lene	n-Propyl- benzene	1,1,1,2- Tetra- chloro- ethane	Tetra- chloro- ethene (PCE)	Toluene	1,2,3- Trichloro- benzene	1,1,1- Trichloro- ethane
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PW-1-01	ND	ND	ND	ND	ND	ND	ND	10	ND	ND	40
PW-1-02	ND	ND	ND	1.1	ND	ND	0.6	190	ND	ND	190
PW-1-03	ND	ND	ND	23 B	ND	ND	0.5	210	ND	ND	180
PW-1-04	ND	ND	ND	26 B	ND B	ND	ND	110 B	0.2 J	ND B	110
PW-1-05	ND	ND	ND	ND	ND	ND	0.6	170	ND	ND	140
PW-1-06	ND	ND	ND	0.6 J,B	ND	ND	0.5	200	ND	ND	120
PW-1-07	ND	ND	ND	1 J,B	ND	ND	0.5	170	0.1 J	ND	86
PW-1-08	ND	ND	ND	1.8 J	ND	ND	0.8	240	ND B	ND	110
PW-1-09	ND	ND	ND	ND	ND	ND	0.9	270	ND B	ND	87
PW-2-01	ND	1.1	1	ND	3.2	0.7	ND	1.1	0.5	ND	2.1
PW-2D-01	ND	0.8	0.8	ND	2.9	0.6	ND	0.9	ND	ND	0.9
PW-2-02	0.6	1.2	ND	0.3 J	ND	0.4 J	ND	3.9	0.2 J	ND	18
PW-2-03	0.1 J	0.6	ND	0.6 B	ND	0.3 J	ND	1.9	ND	ND	2.8
PW-2-04	0.2 J	1.1	ND	0.5 B	14 B	0.7	ND	0.9 B	0.5	ND B	1.3
PW-2-05	0.3 J	1	0.9	ND	10	0.6	ND	0.2 J	ND	ND	1.6
PW-2-06	0.3 J	1.5	2.2	0.6 B	7.8	1	ND	ND	ND	ND	0.4 J
PW-2-07	ND	1.3	ND	ND J,B	6	0.8	ND	ND	ND	ND	ND
PW-2D-07	ND	1.3	ND	ND J,B	6.1	0.9	ND	ND	ND	ND	ND
PW-2-08	ND	1.3	2.5	0.8 J	5.2	0.7	ND	0.6	ND B	ND	0.5 J
PW-2-09	0.5	1.7	1.8	ND	7.6	ND	ND	ND	ND B	ND	1.5
PW-3-01	ND	1.1	ND	ND	3.2	0.7	ND	ND	0.7	ND	ND
PW-3-02	ND	0.1 J	ND	0.2 J	ND	ND	ND	ND	ND	ND	0.1 J
PW-3-03	ND	ND	ND	ND B	ND	ND	ND	ND	ND	ND	0.2 J
PW-3-04	ND	ND	ND	ND B	ND B	ND	ND	1.1 B	0.2 J	ND B	ND
PW-3-05	ND	ND	ND	0.6	ND	ND	ND	ND	ND	ND	0.3 J
PW-3-06	ND	ND	ND	0.3 J,B	ND	ND	ND	ND	ND	ND	ND
PW-3-07	ND	ND	ND	1.6 J,B	0.2 J	ND	ND	ND	ND	ND	ND
PW-3-08	ND	ND	ND	1.8 J	ND	ND	ND	ND	ND B	ND	ND
PW-3-09	ND	ND	ND	ND	0.9	ND	ND	ND	ND B	ND	ND
PW-4-01	ND	ND	ND	ND	ND	ND	ND	40	ND	ND	ND
PW-4-02	ND	ND	ND	0.3 J	ND	ND	ND	150	ND	0.3 J	6.8
PW-4-03	ND	ND	ND	70 B	ND	ND	ND	140	ND B	ND	10
PW-4-04	ND	ND	ND	72 B	ND B	ND	ND	320 B	0.4 J	ND B	5.9
PW-4-05	ND	ND	ND	ND	ND	ND	ND	96	ND	ND	6.5
PW-4-06	ND	ND	ND	0.4 J,B	ND	ND	ND	110	ND	ND	5.3
PW-4-07	ND	ND	ND	0.5 J,B	ND	ND	ND	140	ND	ND	4.7
PW-4-08	ND	ND	ND	1.2 J	ND	ND	ND	97	ND B	ND	5.5
PW-4-09	ND	ND	ND	ND	ND	ND	ND	110	ND B	ND	3.9



Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs (Cont.)

GROUND WATER SAMPLE ID	Ethyl- benzene	Iso- propyl- benzene	p-Iso- propyl- toluene	Methylene Chloride	Naptha- lene	n-Propyl- benzene	1,1,1,2- Tetra- chloro- ethane	Tetra- chloro- ethene (PCE)	Toluene	1,2,3- Trichloro- benzene	1,1,1- Trichloro- ethane
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PW-5-02	ND	ND	ND	8.6	ND	ND	0.6	220	ND	ND	270
PW-5-03	ND	ND	ND	19 B	ND	ND	0.5	140	ND B	ND	160
PW-5-04	ND	ND	ND	120 B	ND B	ND	0.5	220 B	0.6 B	ND B	150
PW-5-05	ND	ND	ND	4.8 B	ND	ND	ND	180	ND	ND	280
PW-5-06	ND	ND	ND	2.5 B	ND	ND	ND	170	ND	ND	250
PW-5-07	ND	ND	ND	2.1 B	ND	ND	0.6 J	210	ND	ND	270
PW-5-08	ND	ND	ND	2.6 J	ND	ND	ND	240	ND B	ND	310
PW-5-09	ND	ND	ND	6.6	ND	ND	0.9	320	ND B	ND	390
PW-5D-09	ND	ND	ND	5.9	ND	ND	0.7	64	ND B	ND	110
PW-6-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-6-02	ND	ND	ND	0.3 J	ND	ND	ND	43	0.3	ND	2.7
PW-6-03	ND	ND	ND	74 B	ND	ND	ND	76	0.1 J	ND	9 J
PW-6-04	ND	ND	ND	1,800 B	ND B	ND	ND	320 B	0.2 J	ND B	2.1
PW-6-05	ND	ND	ND	0.7	ND	ND	ND	71	ND	ND	9.7
PW-6-06	ND	ND	ND	0.3 J,B	ND	ND	ND	73	ND	ND	11
PW-6-07	ND	ND	ND	ND B	ND	ND	ND	76	ND	ND	3.9
PW-6-08	ND	ND	ND	1 J	ND	ND	ND	77	ND B	ND	8.8
PW-6-09	ND	ND	ND	ND	ND	ND	ND	80	ND B	ND	7.3
SW-1-02	3.9	1.5	ND	400	ND	1.9	ND	250	38	ND	2,100
SW-1-03	0.7	0.4 J	ND	110 B	ND	0.5	ND	110	3 B	ND	1,700
SW-1D-03	0.7	0.4 J	ND	89 B	ND	0.5	0.2 J	120	2.8 B	ND	1,800
SW-1-04	1.7	0.8	1.6	610 B	ND B	1	0.5	510 B	7	ND B	3,100
SW-1-05	1.5	1	2.9	9.9 B	20	1.2	0.6	300	3.1	ND	5,900
SW-1D-05	1.4	0.9	2.6	10 B	18	1.1	0.7	290	2.9	ND	5,900
SW-1-06	1.2	1.7	ND	8.2 B	30	1.8	0.4 J	270	2.9	ND	8,000
SW-1-07	1.4	1.3	0.8	10 B	21	1.5	ND	320	2.8	ND	6,300
SW-1-08	1.2	2.6	2.9	10 J	29	2.5	0.6	510	2.7 B	ND	9,300
SW-1D-08	1.3	2.8	3.3	10 J	35	2.9	0.7	480	3 B	ND	8,900
SW-1-09	2.7	2.8	5.4	120	47	3.2	0.9	430	22 B	ND	7,100
SW-2-02	ND	3.5	ND	160	32	1.1	ND	36	3.2	ND	2,400
SW-2D-02	ND	3.7	ND	220	98	1.3	ND	34	3.3	ND	2,400
SW-2-03	0.7	5	ND	93 B	81	1.7	0.3 J	44	8.5 B	ND	2,500
SW-2-04	3.4	4.2	ND	360 B	98 B	3.1	0.3 J	270 B	7 B	ND B	2,600
SW-2D-04	3.6	4.5	ND	330 B	120 B	3.4	0.3 J	250 B	6.2 B	ND B	2,600
SW-2-05	1.6	3.8	ND	11 B	79	2.7	ND	37	4.2	ND	2,500
SW-2-06	1.7	4.8	ND	10 B	81	3	ND	46	4.2	ND	2,100
SW-2D-06	1.7	4.9	ND	10 B	85	3.2	ND	47	4.3	ND	2,200
SW-2-07	1.8	4.8	ND	12 B	88	2.9	ND	47	4	ND	2,000
SW-2-08	1.8	4.8	2.3	16 J	76	2.9	ND	50	3.6 B	ND	2,100
SW-2-09	2.6	6.3	2.9	38	100	4.1	ND	92	5.7 B	ND	2,000

Notes: ND: Compound not detected (-): Compound not analyzed.

(\*): Duplicate sample of PW-3 was analyzed for PCB's--both were non-detect.

(+): Rounded to the nearest tens

J: Compound detected at a level less than the quantitation limit.

B: Compound detected in either field equipment blank or method blank.

TRPH: Total recoverable petroleum hydrocarbons by EPA Method 418.1.

Diesel: Measured by modified EPA Method 8015.

Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-05.

Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs (Cont.)

GROUND WATER SAMPLE ID	1,1,2- Tri- chloro- ethane	Trichloro- ethene (TCE)	Trichloro- fluoro- methane	1,2,4- Trimethyl- benzene	1,3,5- Trimethyl- benzene	Vinyl Chlor- ide	Xylene Total	Other VOCS	TOTAL VOCS(+)	TRPH	Diesel	PCBs
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L
PW-1-01	ND	240	ND	ND	ND	ND	ND	ND	820	ND	ND	-
PW-1-02	70	650	28	ND	ND	0.2 J	ND	ND	4,270	ND	ND	-
PW-1-03	84	530	30	ND	ND	0.2 J	ND	6.7	3,220	-	ND	-
PW-1-04	65	310 B	35	ND	ND	0.2 J	ND	ND	2,050	ND	ND	-
PW-1-05	81	490	29	ND	ND	0.2 J	ND	ND	4,970	-	-	-
PW-1-06	70	520	14	ND	ND	ND	ND	136	3,550	-	-	-
PW-1-07	80	480	6	ND	ND	ND	ND	ND	2,910	-	-	-
PW-1-08	87	600	17	ND	ND	ND	ND	ND	4,750	-	-	-
PW-1-09	82	690	25	ND	ND	ND	ND	ND	4,410	-	-	-
PW-2-01	ND	27	ND	0.7	2.8	ND	1.1	100	150	5.9	18,300	-
PW-2D-01	ND	11	ND	0.6	2.2	ND	1.1	400	430	ND	ND	-
PW-2-02	ND	42	ND	ND	ND	0.1 J	2.8	ND	90	11	8,700	-
PW-2-03	ND	30	ND	0.2 J	1.8	0.3 J	0.7	123	180	-	14,000	-
PW-2-04	ND	7.7 B	ND	0.7	4.2	1	2.1	113	190	12	4,300	-
PW-2-05	ND	1.5	0.5	0.6	6.3	0.3 J	ND	175	250	2.4	4,900	-
PW-2-06	1.9	1	ND	0.9	5	ND	2.9	204	270	4.8	5,400	-
PW-2-07	ND	0.9	ND	0.7	4.3	ND	1.5	196	260	1.1	2,000	-
PW-2D-07	ND	0.8	0.1 J	0.7	4.1	ND	1.3	171	240	1.2	2,400	-
PW-2-08	ND	2.6	ND	0.7	3.8	ND	2.2	ND	90	33	44,000	-
PW-2-09	ND	4.9	ND	0.8	5.5	0.6	3.5	ND	120	ND	1,700	-
PW-3-01	ND	12	ND	ND	ND	ND	ND	20	40	ND	128,000	ND
PW-3-02	ND	5.1	ND	ND	ND	ND	ND	ND	10	ND	210	-
PW-3-03	ND	5.1	0.2 J	ND	ND	ND	ND	8.7	20	-	220	-
PW-3-04	ND	3.5 B	ND	ND	ND	ND	ND	11	20	ND	500	-
PW-3-05	ND	1	ND	ND	ND	ND	ND	ND	0	ND	350	-
PW-3-06	ND	0.7	ND	ND	ND	ND	ND	ND	0	ND	620	ND(*)
PW-3-07	ND	2.2	ND	ND	ND	ND	ND	9.4	10	0.2	690	ND(*)
PW-3-08	ND	7.2	ND	ND	ND	ND	ND	ND	20	0.8	860	ND(*)
PW-3-09	ND	4.4	ND	ND	ND	ND	ND	ND	10	ND	ND	ND(*)
PW-4-01	ND	3,800	ND	ND	ND	ND	ND	ND	4,220	ND	ND	-
PW-4-02	5.5	11,000	ND	ND	ND	0.2 J	ND	ND	12,590	ND	ND	-
PW-4-03	7.2	8,000	0.1 J	ND	ND	0.6	ND	ND	9,880	-	ND	ND
PW-4-04	6.2	7,900 B	ND	ND	ND	0.9	ND	ND	9,460	ND	ND	-
PW-4-05	3.6	9,900	ND	ND	ND	1.8	ND	ND	12,100	-	-	-
PW-4-06	5.1	11,000	ND	ND	ND	ND	ND	ND	12,230	-	-	-
PW-4-07	7.1	13,000	ND	ND	ND	ND	ND	ND	14,470	-	-	-
PW-4-08	4.8	9,000	ND	ND	ND	ND	ND	ND	10,190	-	-	-
PW-4-09	5.7	9,100	ND	ND	ND	ND	ND	ND	9,750	ND	ND	-

Table 3-1. Groundwater analytical results for VOCs, petroleum hydrocarbons, and PCBs (Cont.)

GROUND WATER SAMPLE ID	1,1,2- Tri- chloro- ethane	Trichloro- ethene (TCE)	Trichloro- fluoro- methane	1,2,4- Trimethyl- benzene	1,3,5- Trimethyl- benzene	Vinyl Chlor- ide	Xylene Total	Other VOCS	TOTAL VOCS(+)	TRPH	Diesel	PCBs
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L
PW-5-02	15	1,300	2	ND	ND	ND	ND	ND	2,830	ND	ND	-
PW-5-03	14	960	1	ND	0.2 J	ND	ND	ND	1,940	-	120	-
PW-5-04	17	1,200 B	1.7	ND	ND	ND	0.4 J	ND	2,320	ND	150	-
PW-5-05	15	2,100	0.8	ND	ND	ND	ND	ND	4,020	-	ND	-
PW-5-06	18	2,000	0.5 J	ND	ND	ND	ND	ND	3,250	-	ND	-
PW-5-07	25	1,600	0.4 J	ND	ND	ND	ND	ND	2,880	-	ND	-
PW-5-08	31	1,800	0.6	ND	ND	ND	ND	0.6	3,400	-	100	-
PW-5-09	46	2,300	1.3	ND	ND	ND	ND	ND	4,430	ND	850	-
PW-5D-09	42	1,700	1.2	ND	ND	ND	ND	ND	2,230	ND	ND	-
PW-6-01	ND	7,800	ND	ND	ND	ND	ND	ND	7,800	ND	ND	-
PW-6-02	1.7	6,500	ND	ND	ND	0.2 J	ND	ND	6,720	ND	ND	-
PW-6-03	1.2	4,900	0.4 J	ND	ND	0.3 J	ND	ND	5,390	-	ND	-
PW-6-04	0.8	3,700 B	ND	ND	ND	0.3 J	ND	ND	6,030	ND	ND	-
PW-6-05	1.5	8,100	0.3 J	ND	ND	0.4 J	ND	ND	8,880	-	-	-
PW-6-06	2.5	7,800	ND	ND	ND	ND	ND	ND	8,200	-	-	-
PW-6-07	1.5	7,900	ND	ND	ND	ND	ND	ND	8,190	-	-	-
PW-6-08	2.3	7,900	0.1 J	ND	ND	ND	ND	ND	8,340	-	-	-
PW-6-09	2.9	10,000	ND	ND	ND	ND	ND	ND	10,470	-	-	-
SW-1-02	5.5	32,000	ND	12	6.0	2.8	14	ND	38,480	4.1	5,600	-
SW-1-03	2.7	6,000	ND	4.6	2.1	0.4 J	5.3	40	9,050	-	550	ND
SW-1D-03	2.6	6,200	0.2 J	4.9	2.1	0.2 J	5.3	39	9,300	-	440	ND
SW-1-04	5.9	7,700 B	ND	7.9	ND	1.2	7	100	14,140	310	400,000	-
SW-1-05	5.8	17,000	ND	15	9.8	1.1	15	122	28,380	1,100	1,800,000	-
SW-1D-05	5.3	17,000	ND	14	5.9	1	14	128	27,760	860	770,000	-
SW-1-06	8.8	11,000	0.5 J	26	8.7	0.4 J	21	197	22,380	700	250,000	-
SW-1-07	11	11,000	0.4 J	17	7.3	ND	19	178	20,990	12	54,000	-
SW-1-08	13	10,000	0.4 J	28	12	ND	25	ND	24,420	120	230,000	-
SW-1D-08	15	10,000	0.4 J	30	12	ND	26	ND	23,820	120	150,000	-
SW-1-09	12	21,000	ND	31	11	1.6	32	0.6	34,700	190	750,000	-
SW-2-02	10	10,000	1.2	17	6.9	1	23	ND	15,250	0.7	940	-
SW-2D-02	12	9,400	1.2	22	7.6	1.1	27	ND	14,870	0.8	1,000	-
SW-2-03	12	7,600	1.4	32	14	1.1	31	105	13,230	-	1,100	ND
SW-2-04	15	9,800 B	1.2	39	9.2	2.8	38	102	16,470	3.2	5,300	-
SW-2D-04	14	10,000 B	1.1	38	9.7	1.5	40	110	16,440	3.9	4,300	-
SW-2-05	11	11,000	0.7	27	3.5	1.1	32	123	17,290	5.7	4,400	-
SW-2-06	13	8,900	0.5	30	8.3	0.6	37	230	13,510	13	4,600	-
SW-2D-06	14	9,100	0.5	31	6.4	0.6	39	190	13,820	9.3	4,700	-
SW-2-07	16	8,400	0.4 J	30	7.6	ND	37	145	12,990	2.9	4,000	-
SW-2-08	17	9,300	0.4 J	27	5.3	ND	34	ND	14,440	13	8,200	-
SW-2-09	25	13,000	ND	27	5.6	2.2	42	4.6	19,370	21	68,000	-

Notes: ND: Compound not detected. (-): Compound not analyzed.

(\*): Duplicate sample of PW-3 was analyzed for PCB's--both were non-detect.

(+): Rounded to the nearest tens

J: Compound detected at a level less than the quantitation limit.

B: Compound detected in either field equipment blank or method blank.

TRPH: Total recoverable petroleum hydrocarbons by EPA Method 418.1.

Diesel: Measured by modified EPA Method 8015.

Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-05.

compared to 44,000 µg/L in March 1993 sample. Diesel was not detected in PW-3 in June 1993. The iso-concentration contour for diesel is shown on Figure 3-1.

TRPH (as measured by EPA Method 418.1) was not detected in PW-2 and PW-3 in the June 1993 sampling round.

### **3.2.2 Upper Water-bearing Zone**

#### **VOCs**

The June 1993 groundwater VOC data for the upper water-bearing zone were generally consistent with previously observed results. As discussed in Section 2, the groundwater potentiometric surface for the upper water-bearing zone has shown variability which may be partially attributable to separate-phase material observed in SW-1 and SW-2. Additionally, the wells may be monitoring semi-isolated lenses within the upper water-bearing zone or some other hydrogeologic boundary or feature, such as faulting, which is common in the surrounding area and may affect the flow and correspondingly the distribution of chemicals in the groundwater. The iso-concentration maps for selected analytes and total VOCs have been provided (Figures 3-2 through 3-5).

TCE was detected in the upper water-bearing zone monitoring wells in the June 1993 sampling. TCE levels were 690 µg/L in PW-1, 10,000 µg/L in PW-6, 9,100 µg/L in PW-4 and 2,300 µg/L in PW-5. TCE levels were 21,000 µg/L and 13,000 µg/L in SW-1 and SW-2, respectively. The iso-concentration contour map for TCE in the upper water bearing zone is shown on Figure 3-2.

Levels of 1,1,1-TCA during June 1993 were generally the same as observed in March 1993. Levels of 1,1,1-TCA were detected in SW-1 at 7,100 µg/L and in SW-2 at 2,000 µg/L. PW-1 and PW-5 yielded 1,1,1-TCA at 87 and 390 µg/L, respectively. Levels of 1,1,1-TCA were detected in PW-4 and PW-6 at 3.9 and 7.3 µg/L, respectively. The iso-concentration contours for 1,1,1-TCA are presented on Figure 3-3.

In June 1993, 1,1-DCE was detected in the upper water-bearing zone monitoring wells. Concentrations of 1,1-DCE observed in SW-1 and SW-2 were 4,900 and 780 µg/L,

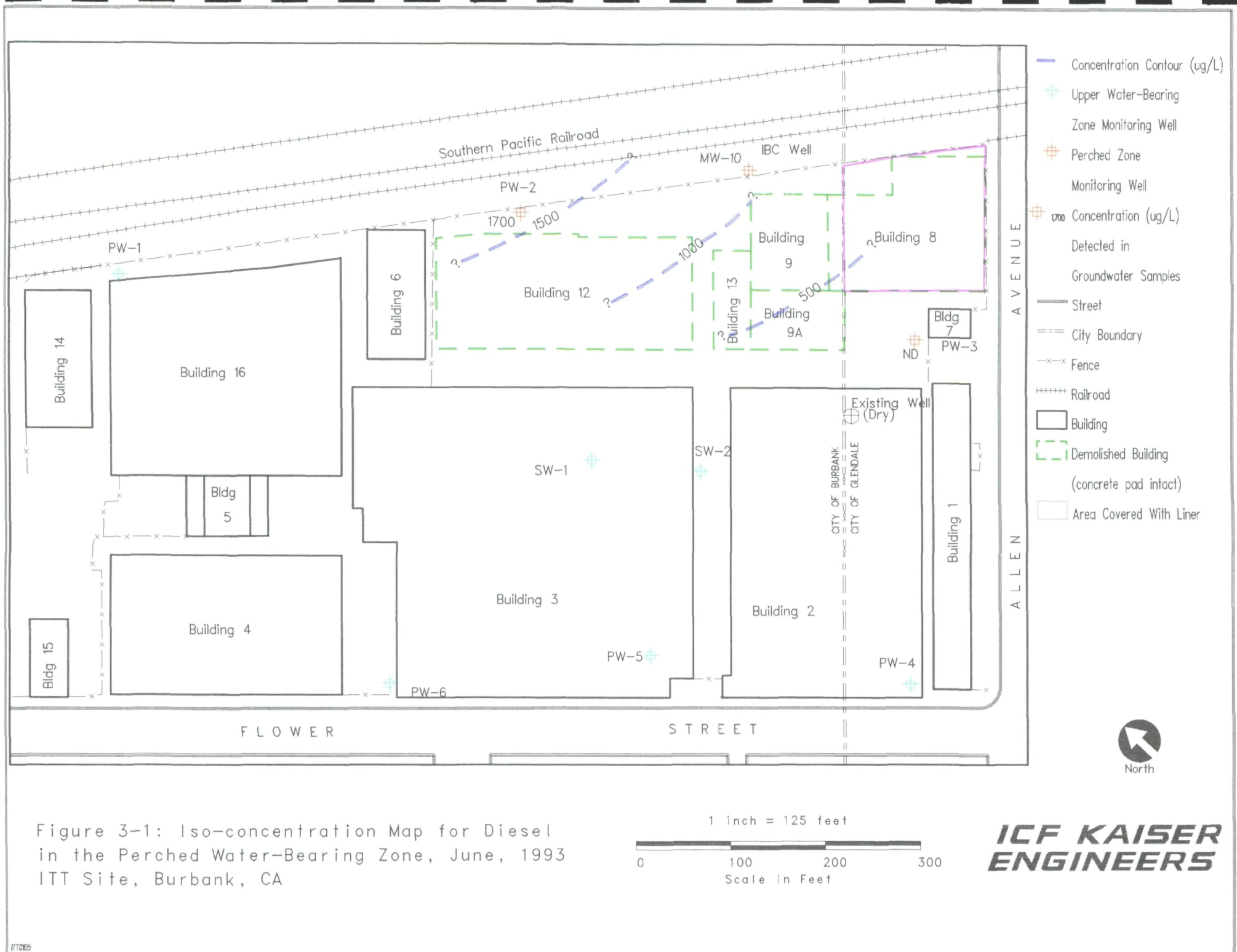


Figure 3-1: Iso-concentration Map for Diesel in the Perched Water-Bearing Zone, June, 1993 ITT Site, Burbank, CA

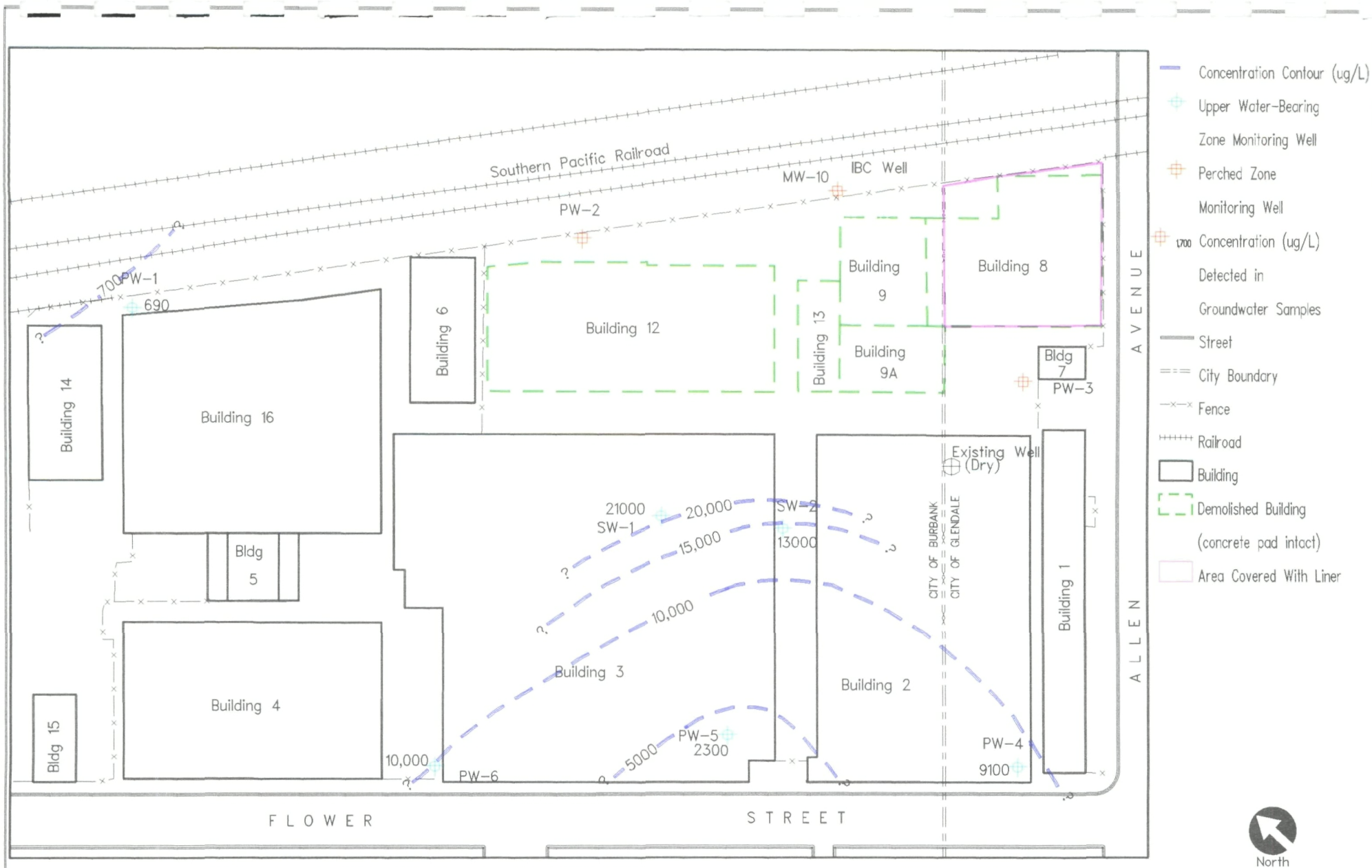
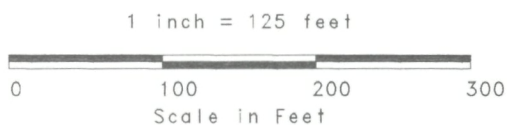


Figure 3-2: Iso-concentration Map for TCE in the Upper Water-Bearing Zone, June, 1993  
ITT Site, Burbank, CA



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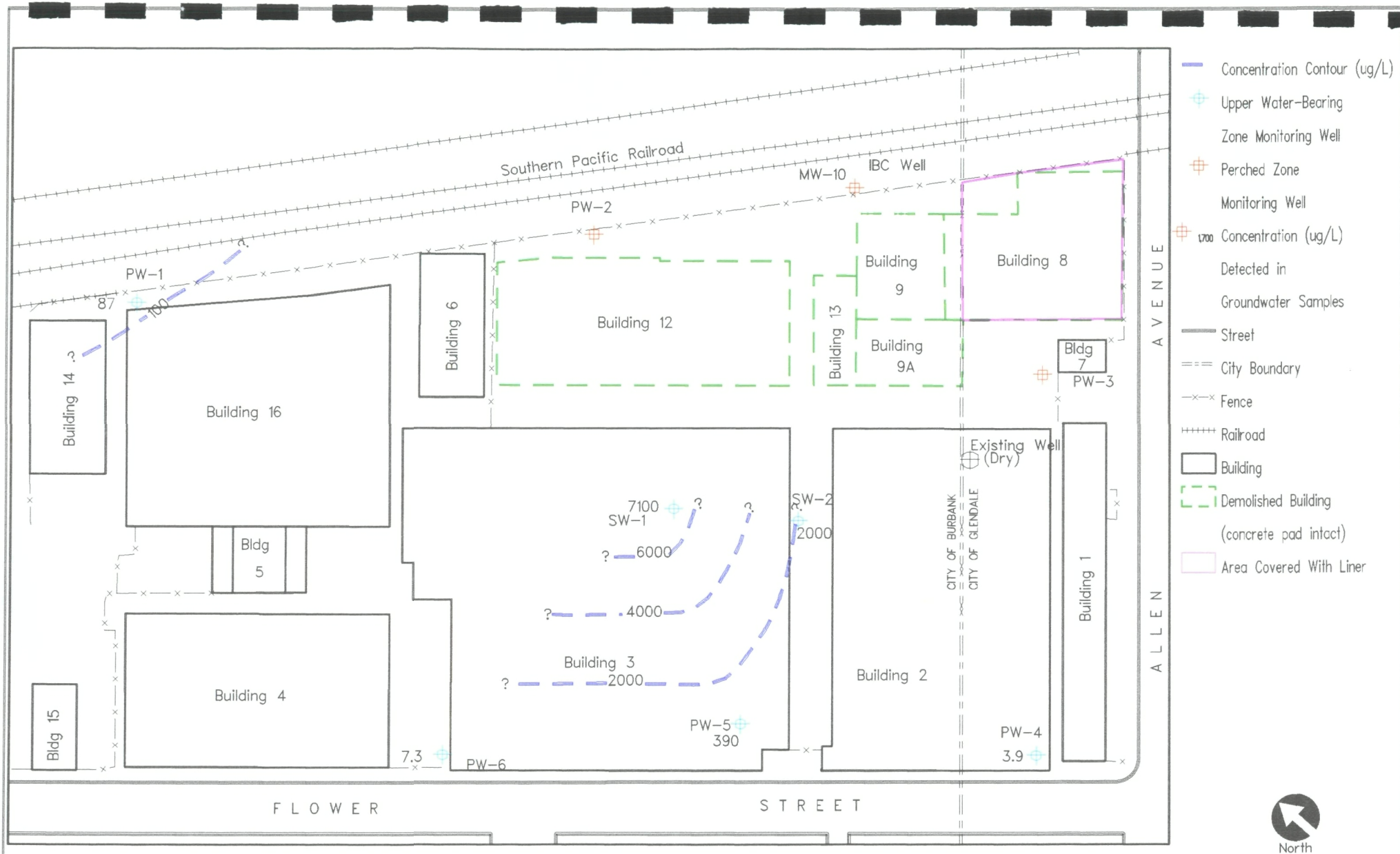


Figure 3-3: Iso-concentration Map for 1,1,1-TCA in the Upper Water-Bearing Zone, June, 1993  
ITT Site, Burbank, CA

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respectively. The concentrations of 1,1-DCE in wells PW-1, PW-4, PW-5 and PW-6 were 3,000, 430, 1,100, and 340  $\mu\text{g/L}$ , respectively. The iso-concentration contour map for 1,1-DCE is shown on Figure 3-4.

In June 1993, concentrations of PCE were detected in samples from wells PW-1 at 270  $\mu\text{g/L}$ , PW-4 at 110  $\mu\text{g/L}$ , PW-5 at 320  $\mu\text{g/L}$ , PW-6 at 80  $\mu\text{g/L}$ , SW-1 at 430  $\mu\text{g/L}$ , and SW-2 at 92  $\mu\text{g/L}$ .

Additional compounds detected in the upper water-bearing zone monitoring wells include cis-1,2-DCE, 1,1-DCA, and chloroform. Concentrations of these additional compounds observed in SW-2 were 2,300  $\mu\text{g/L}$  of cis-1,2-DCE, 650  $\mu\text{g/L}$  of 1,1-DCA, 240  $\mu\text{g/L}$  of chloroform. Methylene chloride was detected in PW-5, SW-1 and SW-2 at 6.6, 120 and 38  $\mu\text{g/L}$ , respectively. In the past methylene chloride has been detected in blanks, and it is presumed that it continues to be a laboratory artifact.

Other compounds were also detected in the upper water-bearing zone wells. Naphthalene was detected in the upper water-bearing zone in SW-1 and SW-2 at concentrations of 47 and 100  $\mu\text{g/L}$ , respectively. 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and total xylenes were detected in SW-1 at concentrations of 31, 11 and 32  $\mu\text{g/L}$ , respectively. Benzene and total xylenes were detected in SW-1 at concentrations of 25 and 42  $\mu\text{g/L}$ , respectively. These chemicals are associated with separate-phase material. Trace levels of other compounds were detected and are listed in Table 3-1. The iso-concentration map for total VOCs is presented on Figure 3-5.

### **Diesel and TRPH**

To obtain a more representative sample of the groundwater in wells SW-1 and SW-2, the wells were bailed to remove the separate-phase material prior to collecting groundwater samples. The separate-phase material was drummed separately and has been disposed of properly. In the upper water-bearing zone, diesel was detected in three wells: PW-5, SW-1 and SW-2. Diesel concentrations were 850  $\mu\text{g/L}$  in PW-5 (diesel was not detected in the duplicate sample from PW-5), 750,000  $\mu\text{g/L}$  in SW-1, and 68,000  $\mu\text{g/L}$  in SW-2 in June 1993. Diesel has been detected intermittently in samples collected from PW-5.



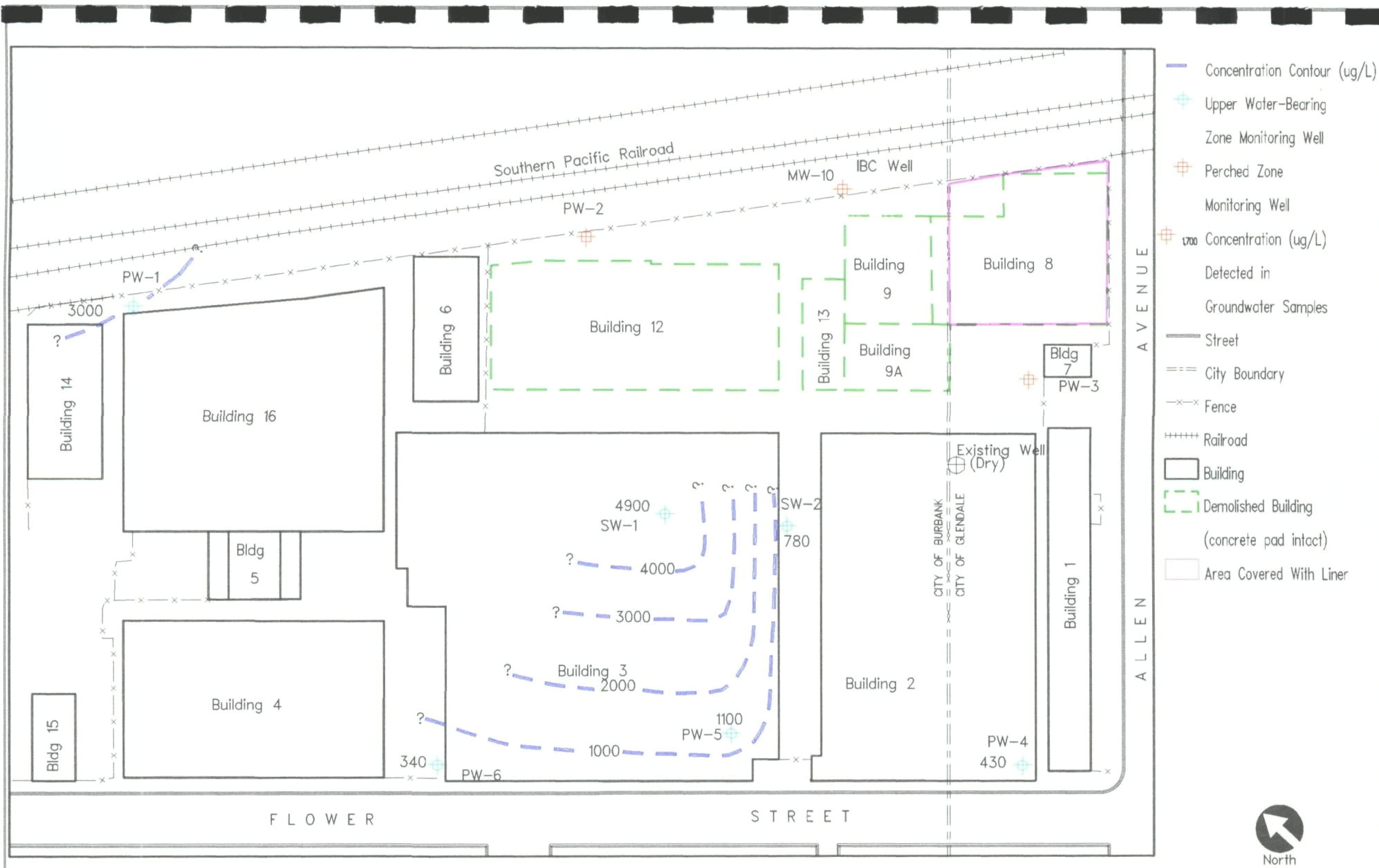


Figure 3-4: Iso-concentration Map for 1,1-DCE in the Upper Water-Bearing Zone, June, 1993  
ITT Site, Burbank, CA

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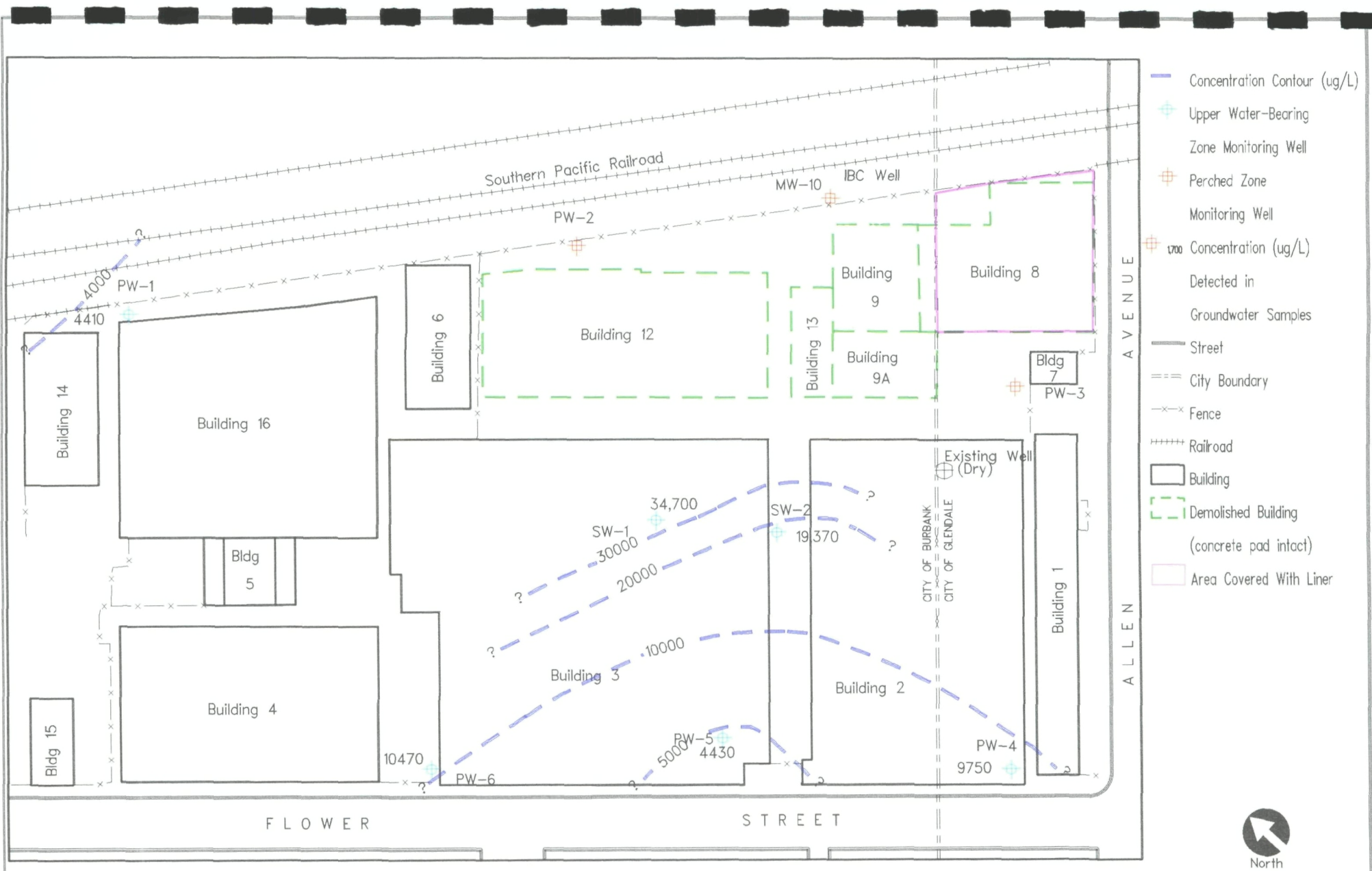
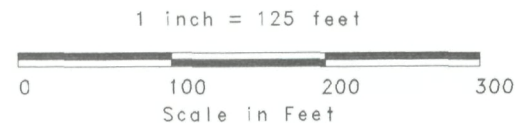


Figure 3-5: Iso-concentration Map for Total VOCs in the Upper Water-Bearing Zone, June, 1993  
ITT Site, Burbank, CA



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TRPH was measured and detected in SW-1 and SW-2 at 190 mg/L and 21 mg/L, respectively.

### **Polychlorinated Biphenyls (PCBs)**

During previous rounds of groundwater sampling PCBs have not been detected in any of the samples. PW-3 continues to be monitored for PCBs and was non-detect.

## **3.3 GROUNDWATER QUALITY - INORGANIC**

Groundwater samples collected June 8-11, 1993 were analyzed for turbidity, specific metals (chromium, hexavalent chromium, nickel), ammonia, nitrite and nitrate for selected wells (see Section 3.1). The results of the analyses for these parameters are presented in Appendix E, along with other inorganic parameters analyzed in previous sampling rounds.

### **3.3.1 General Mineral Characteristics**

Nitrate as N was detected in PW-1 at 18 mg/L, PW-4 at 8.4 mg/L, PW-5 at 19 mg/L, SW-1 at 9.0 mg/L; nitrate as N was not detected in SW-2. Nitrate as  $\text{NO}_3$  was detected in PW-1 at 80 mg/L, PW-4 at 37 mg/L, PW-5 at 75 mg/L, SW-1 at 40 mg/L; nitrate as  $\text{NO}_3$  was not detected in SW-2. Nitrite as  $\text{NO}_2$  was not detected in any of the samples analyzed. Ammonia ( $\text{NH}_3$ ) was detected at 2.1 mg/L in PW-5, 0.11 mg/L in PW-6, 5.3 mg/L in SW-1 and 1.5 in SW-2.

### **3.3.2 Metals**

In the June 1993 monitoring, the metals analyzed were total chromium, hexavalent chromium, and nickel for selected wells. These metals were analyzed in the upper water-bearing zone wells (PW-1, PW-4, PW-5, PW-6) as described in Section 3.1. The analytical results are presented in Appendix E.

Trace levels of total chromium, hexavalent chromium and nickel were detected in samples from some of the upper water-bearing wells. Total chromium was detected in PW-1,

PW-4, PW-5, and PW-6 at concentrations of 0.024, 0.3, 1.4, and 0.087 mg/L, respectively. Hexavalent chromium was detected only in PW-5 at 1.4 mg/L (Appendix E).

Nickel was detected in PW-4 and PW-6 at 0.41 and 0.39 mg/L, respectively. Nickel was not detected in PW-1.

### **3.4 PROPOSED SAMPLING AND ANALYSIS ACTIVITY FOR THE THIRD QUARTER 1993**

The schedule for the next three months for groundwater depth monitoring, groundwater sampling, and the submission of the next sampling and analysis report is shown on Figure 3-6. The proposed groundwater sampling program for September 1993 is presented in Table 3-2.

**FIGURE 3-6  
SCHEDULE OF GROUNDWATER SAMPLING  
ACTIVITIES FOR THIRD QUARTER 1993**

	JULY				AUGUST				SEPTEMBER				OCTOBER			
Groundwater Levels	●				●				●							
Groundwater Water Sampling									■							
Report Preparation and Agency Submittal												■	■			

Table 3-2

## Proposed Groundwater Sampling Program for ITT Burbank Site, September 1993

<u>Parameter</u>	<u>EPA Method</u>	<u>Wells to be Sampled</u>
VOCs	524.2	All wells.
Diesel fuel	Modified 8015	PW-1, PW-2, PW-3, PW-4, PW-5, SW-1, SW-2.
Total Recoverable Petroleum Hydrocarbons (TRPH)	418.1	PW-2, PW-3, PW-4, PW-5, SW-1, SW-2.
Turbidity	180.1	All wells.
Nitrogen (NO <sub>2</sub> , NO <sub>3</sub> )	300	All upper water-bearing wells.
Ammonia (NH <sub>3</sub> )	350.2	All upper water-bearing wells.
Total Chromium	6010	PW-1, PW-4, PW-5, PW-6
Hexavalent Chromium	SM 3500	PW-5
Nickel	6010	PW-1, PW-4, PW-6, SW-1, SW-2
Polychlorinated Biphenyls	8080	PW-3
General Minerals	Various	All wells.

#### 4.0 REFERENCES

ICF Kaiser Engineers (ICF KE), April, 1993; "First Quarter Sampling and Analysis Report." Consultant's Report to ITT.

James M. Montgomery, Consulting Engineers, Inc. (JMM), December, 1992; "Remedial Investigation of Contaminated Groundwater in the San Fernando Valley." Consultant's Report to Department of Water and Power, the City of Los Angeles, California.

Roy F. Weston, Inc. (Weston), November, 1990; "Preliminary Work Plan For Soils and Groundwater Characterization for ITT Burbank Aerospace Controls." Consultant's Report to ITT.

# **APPENDIX A**

## **GROUNDWATER ELEVATIONS AND HYDROGRAPHS**



APPENDIX A  
GROUNDWATER ELEVATION DATA FOR ITT AEROSPACE CONTROLS SITE

WELL	DATE	DEPTH TO GROUNDWATER (ft below TOC)	GROUNDWATER ELEVATION (ft above MSL)	THICKNESS OF SEPARATE PHASE MATERIAL (feet)	CORRECTED GROUNDWATER ELEVATION (c) (ft above MSL)	CHANGE FROM PREVIOUS MEASUREMENT (feet)	WELL DEPTH (feet)
PW-1	2-25-91	66.10	441.15	NM			103.50 (a)
	3-05-91	72.75	434.50	NM		-6.65	
	7-22-91	74.08	433.17	NM		-1.33	
	8-27-91	74.50	432.75	NM		-0.42	
	10-01-91	74.90	432.35	NM		-0.40	
	1-14-91	75.34	431.91	NM		-0.44	
	1-08-92	75.95	431.30	NM		-0.61	
	1-31-92	75.92	431.33	NM		0.03	103.80
	2-27-92	75.77	431.48	NM		0.15	103.70
	3-30-92	76.16	431.09	NM		-0.39	
	5-05-92	75.62	431.63	NM		0.54	
	6-01-92	75.28	431.97	0.00		0.34	103.78
	6-29-92	75.08	432.17	NM		0.20	
	7-31-92	75.06	432.19	NM		0.02	
	8-18-92	75.07	432.18	NM		-0.01	
	9-28-92	75.10	432.15	NM		-0.03	
	10-27-92	75.20	432.05	NM		-0.10	
	1-18-92	75.14	432.11	NM		0.06	
	2-28-92	75.03	432.22	NM		0.11	
	1-27-93	74.69	432.56	NM		0.34	
	2-23-93	74.06	433.19	NM		0.63	
	3-25-93	73.67	433.58	NM		0.39	
	4-15-93	72.95	434.30	NM		0.72	
	5-11-93	72.07	435.18	NM		0.88	
	6-08-93	71.19	436.06	NM		0.88	
PW-2	2-22-91	36.80	469.85	NM			42.00 (a)
	2-26-91	36.60	470.05	NM		0.20	
	3-05-91	36.55	470.10	NM		0.05	
	7-22-91	35.90	470.75	NM		0.65	42.00
	8-27-91	36.00	470.65	NM		-0.10	
	10-1-91	36.19	470.46	NM		-0.19	
	1-14-91	36.52	470.13	NM		-0.33	42.00
	1-08-92	37.10	469.55	NM		-0.58	
	1-31-92	37.06	469.59	NM		0.04	41.90
	2-27-92	36.11	470.54	NM		0.95	41.90
	3-30-92	34.75	471.90	0.04	471.93	1.39	
	5-05-92	34.56	472.09	0.08	472.16	0.22	
	6-01-92	35.00	471.65	0.05	471.69	-0.47	41.23
	6-29-92	35.30	471.35	0.05 (f)	471.39	-0.30	
	7-31-92	35.65	471.00	0.07	471.06	-0.33	
	8-18-92	35.77	470.88	0.09	470.96	-0.10	
	9-28-92	35.90	470.75	0.02	470.77	-0.19	
	10-27-92	36.06	470.59	0.03	470.62	-0.15	
	1-18-92	36.17	470.48	0.04	470.51	-0.10	
	2-28-92	36.52	470.13	0.05	470.17	-0.34	
	1-27-93	34.96	471.69	0.00	471.69	1.52	
	2-23-93	34.30	472.35	0.00	472.35	0.66	
	3-25-93	33.91	472.74	0.00	472.74	0.39	
	4-15-93	34.20	472.45	0.00	472.45	-0.29	
	5-11-93	34.49	472.16	0.00	472.16	-0.29	
	6-08-93	34.80	471.85	0.01	471.86	-0.30	

APPENDIX A  
GROUNDWATER ELEVATION DATA FOR ITT AEROSPACE CONTROLS SITE

WELL	DATE	DEPTH TO GROUNDWATER (ft below TOC)	GROUNDWATER ELEVATION (ft above MSL)	THICKNESS OF SEPARATE PHASE MATERIAL (feet)	CORRECTED GROUNDWATER ELEVATION (c) (ft above MSL)	CHANGE FROM PREVIOUS MEASUREMENT (feet)	WELL DEPTH (feet)
PW-3	2-22-91	45.25	458.79	NM	459.80		57.00 (a)
	2-27-91	45.25	458.79	NM		0.00	
	3-05-91	45.24	458.80	NM		0.01	
	7-22-91	45.03	459.01	NM		0.21	
	8-27-91	45.10	458.94	NM		-0.07	
	10-1-91	45.20	458.84	NM		-0.10	
	1-15-91	45.35	458.69	NM		-0.15	
	1-08-92	45.22	458.82	NM		0.13	
	1-31-92	45.10	458.94	NM		0.12	57.70
	2-27-92	44.83	459.21	NM		0.27	57.70
	3-30-92	44.50	459.54	NM		0.33	
	5-05-92	44.07	459.97	0.00		0.43	
	6-01-92	44.08	459.96	0.00		-0.01	57.89
	6-29-92	44.17	459.87	NM		-0.09	
	7-31-92	44.27	459.77	0.04		-0.07	
	8-18-92	44.36	459.68	NM		-0.12	
	9-28-92	44.49	459.55	0.00		-0.13	
	10-27-92	44.68	459.36	0.00		-0.19	
	1-18-92	44.80	459.24	0.00		-0.12	
	2-28-92	45.11	458.93	NM		-0.31	
	1-27-93	44.17	459.87	0.00		0.94	
	2-23-93	43.67	460.37	NM		0.50	
	3-25-93	43.17	460.87	NM		0.50	
	4-15-93	43.15	460.89	NM		0.02	
	5-11-93	43.18	460.86	NM		-0.03	
	6-08-93	43.22	460.82	NM		-0.04	
PW-4	2-21-91	64.85	438.83	NM			104.00 (a)
	3-05-91	65.15	438.53	NM		-0.30	
	7-22-91	66.95	436.73	NM		-1.80	
	8-27-91	67.36	436.32	NM		-0.41	
	10-1-91	67.73	435.95	NM		-0.37	
	1-21-91	68.67	435.01	NM		-0.94	
	1-08-92	68.73	434.95	NM		-0.06	
	1-31-92	68.46	435.22	NM		0.27	104.30
	2-27-92	68.36	435.32	NM		0.10	104.30
	3-30-92	68.06	435.62	NM		0.30	
	5-05-92	67.39	436.29	NM		0.67	
	6-01-92	67.17	436.51	0.00		0.22	104.72
	6-29-92	67.03	436.65	NM		0.14	
	7-31-92	67.16	436.52	NM		-0.13	
	8-18-92	67.23	436.45	NM		-0.07	
	9-28-92	67.06	436.62	NM		0.17	
	10-27-92	67.10	436.58	NM		-0.04	
	1-18-92	67.00	436.68	NM		0.10	
	2-28-92	66.73	436.95	NM		0.27	
	1-27-93	66.44	437.24	NM		0.29	
	2-23-93	65.71	437.97	NM		0.73	
	3-25-93	64.76	438.92	NM		0.95	
	4-15-93	64.21	439.47	NM		0.55	
	5-11-93	63.34	440.34	NM		0.87	
	6-08-93	62.55	441.13	NM		0.79	

APPENDIX A  
GROUNDWATER ELEVATION DATA FOR ITT AEROSPACE CONTROLS SITE

WELL	DATE	DEPTH TO GROUNDWATER (ft below TOC)	GROUNDWATER ELEVATION (ft above MSL)	THICKNESS OF SEPARATE PHASE MATERIAL (feet)	CORRECTED GROUNDWATER ELEVATION (c) (ft above MSL)	CHANGE FROM PREVIOUS MEASUREMENT (feet)	WELL DEPTH (feet)
PW-5	7-22-91	68.30	437.86	NM			106.00 (a)
	8-27-91	68.70	437.46	NM		-0.40	103.00 (b)
	10-1-91	69.17	436.99	NM		-0.47	
	1-20-91	69.67	436.49	NM		-0.50	
	1-08-92	70.24	435.92	NM		-0.57	
	1-31-92	69.98	436.18	NM		0.26	102.80
	2-27-92	69.86	436.30	NM		0.12	102.80
	3-30-92	68.97	437.19	NM		0.89	
	5-05-92	66.64	439.52	0.00		2.33	
	6-01-92	66.68	439.48	0.00		-0.04	95.10 (d)
	6-29-92	66.04	440.12	NM		0.64	
	7-31-92	65.35	440.81	NM		0.69	
	8-18-92	65.36	440.80	NM		-0.01	
	9-28-92	65.71	440.45	NM		-0.35	
	10-27-92	65.81	440.35	NM		-0.10	
	11-18-92	65.66	440.50	NM		0.15	
	12-28-92	(g)	NM	NM		NM	
	1-27-93	65.92	440.24	NM		-	
	2-23-93	64.38	441.78	NM		1.54	
	3-25-93	62.80	443.36	NM		1.58	
	4-15-93	59.35	446.81	NM		3.45	
	5-11-93	56.01	450.15	NM		3.34	
	6-08-93	57.05	449.11	NM		-1.04	
PW-6	2-21-91	66.43	439.94	NM			74.00 (a)
	2-28-91	66.05	440.32	NM		0.38	
	3-05-91	66.67	439.70	NM		-0.62	
	7-22-91	66.91	439.46	NM		-0.24	
	8-27-91	68.90	437.47	NM		-1.99	
	10-1-91	69.26	437.11	NM		-0.36	
	11-14-91	69.63	436.74	NM		-0.37	73.30
	1-08-92	70.26	436.11	NM		-0.63	
	1-31-92	70.34	436.03	NM		-0.08	73.40
	2-27-92	70.30	436.07	NM		0.04	73.40
	3-30-92	70.00	436.37	NM		0.30	
	5-05-92	69.56	436.81	NM		0.44	
	6-01-92	69.26	437.11	0.00		0.30	73.60
	6-29-92	69.06	437.31	NM		0.20	
	7-31-92	69.02	437.35	NM		0.04	
	8-18-92	69.05	437.32	NM		-0.03	
	9-28-92	68.95	437.42	NM		0.10	
	10-27-92	69.04	437.33	NM		-0.09	
	11-18-92	69.02	437.35	NM		0.02	
	12-28-92	68.89	437.48	NM		0.13	
	1-27-93	68.63	437.74	NM		0.26	
	2-23-93	67.94	438.43	NM		0.69	
	3-25-93	67.11	439.26	NM		0.83	
	4-15-93	66.60	439.77	NM		0.51	
	5-11-93	65.64	440.73	NM		0.96	
	6-08-93	64.78	441.59	NM		0.86	

APPENDIX A  
GROUNDWATER ELEVATION DATA FOR ITT AEROSPACE CONTROLS SITE

WELL	DATE	DEPTH TO GROUNDWATER (ft below TOC)	GROUNDWATER ELEVATION (ft above MSL)	THICKNESS OF SEPARATE PHASE MATERIAL (feet)	CORRECTED GROUNDWATER ELEVATION (c) (ft above MSL)	CHANGE FROM PREVIOUS MEASUREMENT (feet)	WELL DEPTH (feet)
SW-1	7-22-91	68.90	437.12	NM			106.50 (a)
	8-27-91	71.38	434.64	NM		-2.48	98.50 (b)
	10-1-91	73.56	432.46	NM		-2.18	
	1-20-91	75.73	430.29	NM		-2.17	
	1-08-92	75.70	430.32	NM		0.03	
	1-31-92	75.08	430.94	NM		0.62	98.20
	2-27-92	74.84	431.18	NM		0.24	98.20
	3-30-92	74.50	431.52	5.30	436.04	4.86	
	5-05-92	74.15	431.87	5.61	436.65	0.61	
	6-01-92	72.32	433.70	5.61 (e)	438.48 (e)	1.83	98.41
	6-29-92	69.68	436.34	0.86	437.07	-1.41	
	7-31-92	69.84	436.18	0.97	437.01	-0.07	
	8-18-92	69.98	436.04	0.94	436.84	-0.17	
	9-28-92	69.36	436.66	0.48	437.07	0.23	
	10-27-92	69.51	436.51	0.54	436.97	-0.10	
	1-18-92	69.49	436.53	0.57	437.02	0.05	
	2-28-92	69.33	436.69	0.65	437.24	0.23	
	1-27-93	69.82	436.20	1.53	437.50	0.26	
	2-23-93	69.24	436.78	1.73	438.25	0.75	
	3-25-93	67.12	438.90	NM (h)	438.90	0.65	
	4-15-93	67.30	438.72	1.02	439.59	0.69	
	5-11-93	67.02	439.00	1.73	440.47	0.88	
	6-08-93	66.70	439.32	3.22	442.06	1.59	
SW-2	7-22-91	63.37	440.70	NM			103.00 (a)
	8-27-91	67.30	436.77	NM		-3.93	102.00 (b)
	10-1-91	68.18	435.89	NM		-0.88	
	1-15-91	69.19	434.88	NM		-1.01	
	1-08-92	72.68	431.39	NM		-3.49	
	1-31-92	72.78	431.29	NM		-0.10	103.80
	2-27-92	72.76	431.31	NM		0.02	101.80
	3-30-92	69.75	434.32	NM		3.01	
	5-05-92	69.29	434.78	5.08	439.11	4.79	
	6-01-92	68.60	435.47	5.08 (e)	439.80 (e)	0.69	88.89 (d)
	6-29-92	64.58	439.49	0.71	440.09	0.30	
	7-31-92	64.49	439.58	0.68	440.16	0.06	
	8-18-92	64.35	439.72	0.67	440.29	0.13	
	9-28-92	64.99	439.08	0.44	439.45	-0.84	
	10-27-92	65.08	438.99	0.46	439.38	-0.07	
	1-18-92	65.24	438.83	0.49	439.25	-0.13	
	2-28-92	65.52	438.55	0.40	438.89	-0.36	
	1-27-93	65.06	439.01	0.42	439.37	0.48	
	2-23-93	64.44	439.63	0.39	439.96	0.59	
	3-25-93	63.08	440.99	0.26 (h)	441.21	1.25	
	4-15-93	62.27	441.80	0.24	442.00	0.79	
	5-11-93	60.62	443.45	0.17	443.59	1.59	
	6-08-93	59.46	444.61	0.12	444.71	1.12	

APPENDIX A  
GROUNDWATER ELEVATION DATA FOR ITT AEROSPACE CONTROLS SITE

WELL	DATE	DEPTH TO GROUNDWATER (ft below TOC)	GROUNDWATER ELEVATION (ft above MSL)	THICKNESS OF SEPARATE PHASE MATERIAL (feet)	CORRECTED GROUNDWATER ELEVATION (c) (ft above MSL)	CHANGE FROM PREVIOUS MEASUREMENT (feet)	WELL DEPTH (feet)
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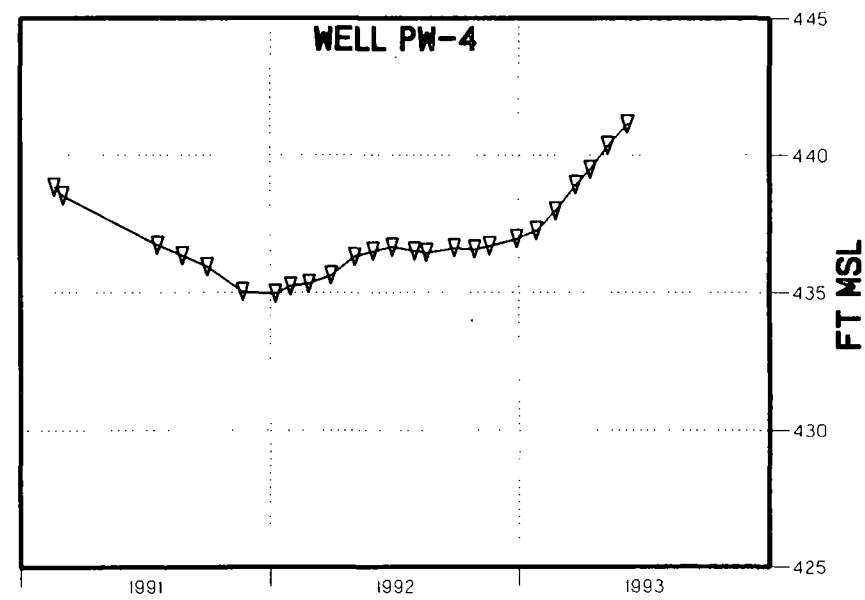
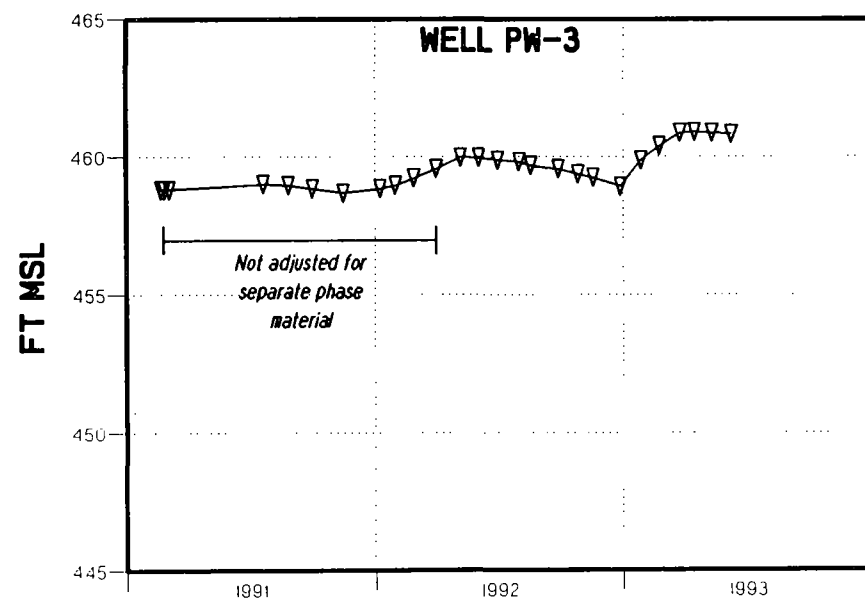
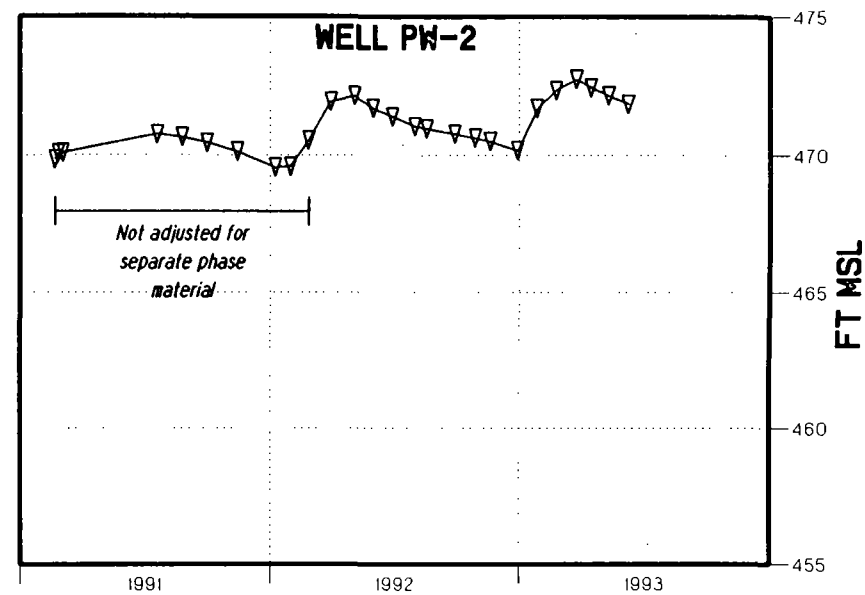
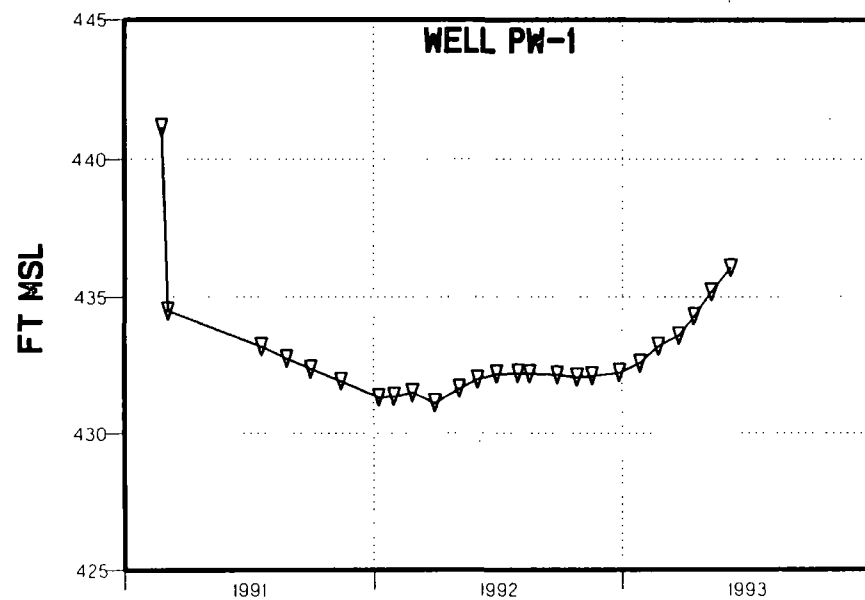
MSL: Mean Sea Level

TOC: Top of Casing

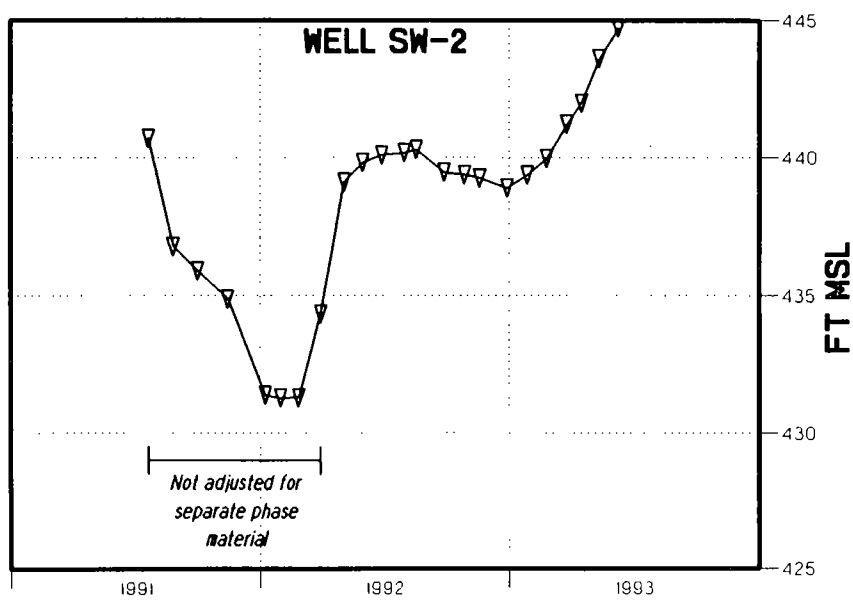
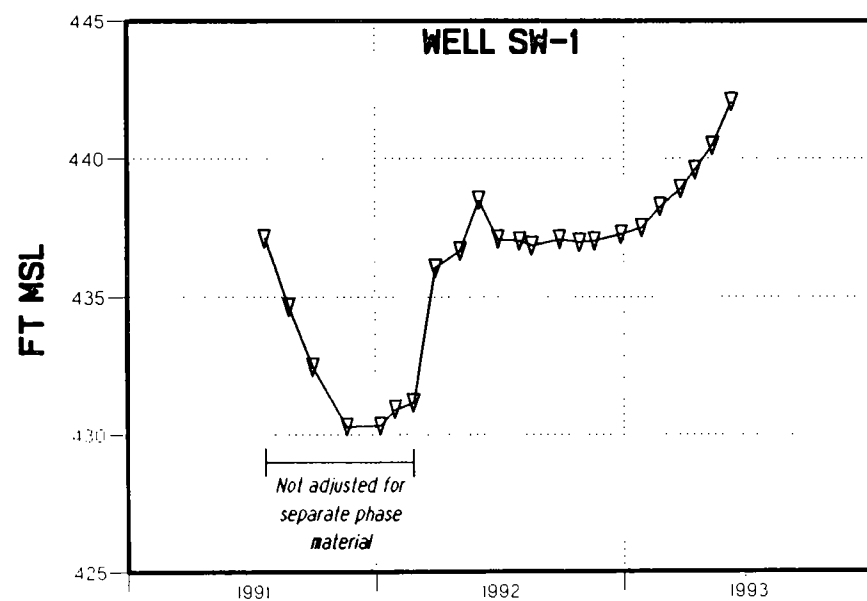
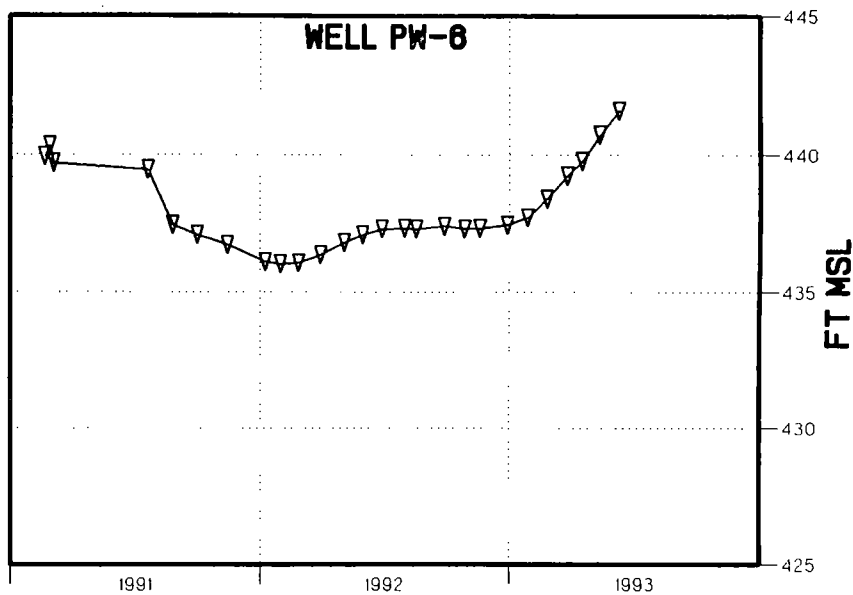
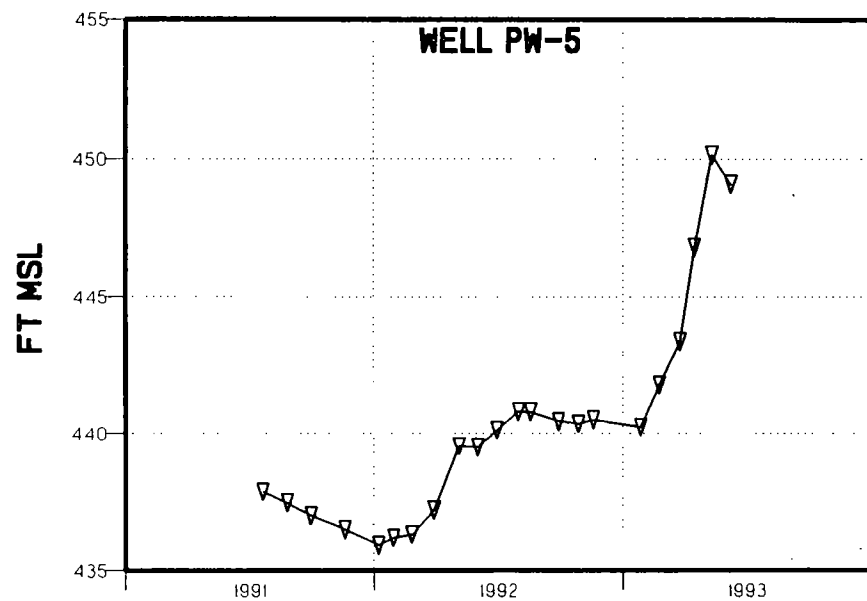
NM: Not Measured

- (a) Well depth at time of well installation.
- (b) Well Depth Measurement for 7/22/91.
- (c) (Corrected Groundwater Elevation) = (Uncorrected Groundwater Elevation) + (Oil Thickness) x (Oil Specific Gravity)  
where the oil specific gravity is assumed to be 0.852.
- (d) Discrepancy in well depth may be due to congestion from pumps in well.
- (e) The floating diesel product was bailed from wells SW-1 and SW-2 during the June 1-4, 1992 groundwater sampling event. The oil layer thickness was not measured in SW-1 and SW-2 on June 1, 1992. The previous month's oil thickness measurement was used to calculate the corrected groundwater elevation. The oil layer thickness in SW-1 and SW-2 on June 4, 1992 was 0.74 ft and 0.42 ft, respectively.
- (f) The oil/water interface meter was not sensitive enough to accurately measure the oil thickness in this well. The previous measurement is indicated here and is used to calculate the corrected groundwater elevation.
- (g) Water depth was not measured because unable to remove well cap to insert probe.
- (h) The oil layer thickness was measured in SW-1 and SW-2 at 1.88 ft and 0.26 ft, respectively, on 3/22/93. The floating diesel product was bailed from well SW-1 prior to redevelopment on 3/23/93. Water depths were measured in wells SW-1 and SW-2 after SW-1 was redeveloped, but the oil layer thickness was not measured due to equipment failure. The 3/22/93 oil thickness measurement was used to calculate the corrected groundwater elevation for SW-2.

# Hydrographs for Monitoring Wells at the ITT Burbank Site



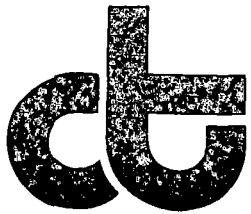
# Hydrographs for Monitoring Wells at the ITT Burbank Site



**APPENDIX B**

**ANALYTICAL RESULTS**  
**AND**  
**CHAIN-OF-CUSTODY FORMS**





Since 1878

Curtis & Tompkins, Ltd. General Analytical Laboratories

2495 Da Vinci, Irvine CA 92714

Phone 714-252-9700

Fax 714-252-9701

ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CA 91608  
ATTN: Nanci BERGE

PAGE 1 OF 11  
DATE RECEIVED: 06/09/93  
DATE REPORTED: 06/25/93

LAB NUMBER: 206881

PROJECT ID: 03827

REPORT ON: FOUR LIQUID SAMPLES ANALYZED AS SPECIFIED ON ATTACHED  
CHAIN OF CUSTODY.

LOCATION: BURBANK-ITT

Reviewed By:

Berkeley

Irvine



LABORATORY NUMBER: 206881-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-1-09

PAGE 2 OF 11  
DATE SAMPLED: 06/08/93  
DATE ANALYZED: 06/15/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	ND	0.5
Trichlorofluoromethane	25-a	0.5
1,1-Dichloroethene	3,000-c	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	130-a	0.5
trans-1,2-Dichloroethene	30-a	0.5
cis-1,2-Dichloroethene	47-a	0.5
Chloroform	7.6	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	33-a	0.5
1,1,1-Trichloroethane	87-a	0.5
Carbon tetrachloride	0.8	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	690-b	0.5
Bromodichloromethane	0.9	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	82-a	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	0.9	0.5
Tetrachloroethene	270-b	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

a = 1:25 Dilution run on 06/21/93. b = 1:250 Dilution run on 06/19/93.

c = 1:500 Dilution run on 06/20/93.

CONTINUED ON NEXT PAGE



LABORATORY NUMBER: 206881-001  
SAMPLE ID: PW-1-09

PAGE 3 OF 11  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	0.8	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 112  
Toluene-d8: 101  
Bromofluorobenzene: 105

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	94		



LABORATORY NUMBER: 206881-002  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-6-09

PAGE 4 OF 11  
DATE SAMPLED: 06/08/93  
DATE ANALYZED: 06/15/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	340-b	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	16-a	0.5
trans-1,2-Dichloroethene	3.2	0.5
cis-1,2-Dichloroethene	13-a	0.5
Chloroform	4.6	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	7.3	0.5
Carbon tetrachloride	ND	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	10,000-c	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	2.9	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	80-a	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

a = 1:10 Dilution run on 06/21/93. b = 1:250 Dilution run on 06/19/93.  
c = 1:1,000 Dilution run on 06/21/93.

CONTINUED ON NEXT PAGE



LABORATORY NUMBER: 206881-002  
SAMPLE ID: PW-6-09

PAGE 5 OF 11  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 83  
Toluene-d8: 101  
Bromofluorobenzene: 105

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	94		



LABORATORY NUMBER: 206881-004  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: TRIP BLANK

PAGE 6 OF 11  
DATE SAMPLED: 06/08/93  
DATE ANALYZED: 06/18/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	ND	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	ND	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

CONTINUED ON NEXT PAGE



LABORATORY NUMBER: 206881-004  
SAMPLE ID: TRIP BLANK

PAGE 7 OF 11  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 111  
Toluene-d8: 104  
Bromofluorobenzene: 108

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	94		



LABORATORY NUMBER: 206881  
CLIENT: ICF KAISER ENGINEERS

PAGE 8 OF 11  
DATE SAMPLED: 06/08/93  
DATE ANALYZED: SEE BELOW

TOTAL CHROMIUM

MATRIX: LIQUID  
METHOD: EPA 6010

LAB ID	SAMPLE ID	RESULT (ug/L)	DATE ANALYZED	QC BATCH
001	PW-1-09	24	06/17	A
002	PW-6-09	87	06/17	A
003	PW-6-09D	84	06/17	A
METHOD BLANK		ND	06/17	A

DETECTION LIMIT: 10

QUALITY CONTROL SUMMARY

	QC BATCH	LCS % RECOVERY	RPD
LABORATORY CONTROL SAMPLE:	A	104	
SAMPLE/SAMPLE DUPLICATE RPD:	A		10





LABORATORY NUMBER: 206881  
CLIENT: ICF KAISER ENGINEERS

PAGE 9 OF 11  
DATE SAMPLED: 06/08/93  
DATE ANALYZED: SEE BELOW

TOTAL NICKEL

MATRIX: LIQUID  
METHOD: EPA 6010

LAB ID	SAMPLE ID	RESULT (ug/L)	DATE ANALYZED	QC BATCH
001	PW-1-09	ND	06/17	A
002	PW-6-09	390	06/17	A
003	PW-6-09D	380	06/17	A
METHOD BLANK		ND	06/17	A

DETECTION LIMIT: 32

QUALITY CONTROL SUMMARY

	QC BATCH	LCS % RECOVERY	RPD
LABORATORY CONTROL SAMPLE:	A	105	
SAMPLE/SAMPLE DUPLICATE RPD:	A		2



LABORATORY NUMBER: 206881-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-1-09

PAGE 10 OF 11  
DATE SAMPLED: 06/08/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Ammonia	ND	0.10	mg/L	EPA 350.1	06/14
Nitrate/Nitrite	15	0.040	mg/L	EPA 353.2	06/12
Turbidity	9.0	0.040	NTU	EPA 180.1	06/09

QUALITY CONTROL SUMMARY

ANALYSIS (units)	SPIKE % REC.	SPIKE DUP. % REC.	RPD
Ammonia (%)	99	102	3
Nitrate/Nitrite (%)	107	111	4

	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD
Turbidity (NTU)	8.96	9.19	2



LABORATORY NUMBER: 206881-002  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-6-09

PAGE 11 OF 11  
DATE SAMPLED: 06/08/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Ammonia	0.11	0.10	mg/L	EPA 350.1	06/14
Nitrate/Nitrite	2.6	0.040	mg/L	EPA 353.2	06/12
Turbidity	28	0.040	NTU	EPA 180.1	06/09

QUALITY CONTROL SUMMARY

ANALYSIS (units)	SPIKE % REC.	SPIKE DUP. % REC.	RPD
Ammonia (%)	99	102	3
Nitrate/Nitrite (%)	107	111	4

	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD
Turbidity (NTU)	8.96	9.19	2

# ABBREVIATIONS

BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.

CCR - California Code of Regulations.

DHS - California Department of Health Services.

EPA - United States Environmental Protection Agency.

LCS - Laboratory Control Spike

LUFT - Leaking Underground Fuel Tank.

MDL - Method Detection Limit

NA - Not Applicable.

NC - Not Calculable

ND - Not Detected at or above the defined detection limit.

PQL - Practical Quantitation Limit

RPD - Relative percent difference.

STLC - Soluble Threshold Limit Concentration.

Surr. - Surrogates.

TCLP - Toxicity Characteristic Leaching Procedure.

TEH - Total Extractable Petroleum Hydrocarbons.

Title 26 - Title 26 of the California Code of Regulations (CCR).

TR~ - Trace, estimated value .

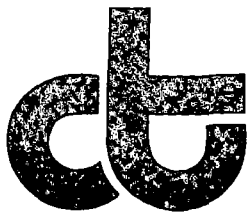
TTLC - Total Threshold Limit Concentration.

TVH - Total Volatile Hydrocarbons.

WET - Waste Extraction Test.

# UNITS

cm <sup>3</sup> - Cubic centimeter	umhos/cm - uS/cm - Micro Siemens/centimeter
Kg - kilogram.	ppb - Parts Per Billion.
L - Liter.	ppm - Parts per Million.
mg - Milligrams.	ug - Micrograms.
M <sup>3</sup> - Cubic meter.	



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2495 Da Vinci, Irvine CA 92714

Phone 714-252-9700

Fax 714-252-9701

ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CA 91608  
ATTN: Nanci BERGE

PAGE 1 OF 7  
DATE RECEIVED: 06/10/93  
DATE REPORTED: 06/25/93

LAB NUMBER: 206897

PROJECT ID: 03827-014-00

REPORT ON: ONE LIQUID SAMPLE ANALYZED AS SPECIFIED ON ATTACHED  
CHAIN OF CUSTODY.

LOCATION: BURBANK-ITT

Reviewed By:



LABORATORY NUMBER: 206897  
CLIENT: ICF KAISER ENGINEERS

PAGE 2 OF 7  
DATE SAMPLED: 06/09/93  
DATE ANALYZED: SEE BELOW

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

MATRIX: LIQUID  
METHOD: EPA 418.1

LAB ID	SAMPLE ID	RESULT (mg/L)	DATE ANALYZED	QC BATCH
001	PW-4-09	ND	06/15	A
METHOD BLANK		ND	06/15	A

DETECTION LIMIT: 1.0

QUALITY CONTROL SUMMARY

	BATCH	SPIKE % REC.	SPIKE DUP. % REC.	RPD
SPIKE/SPIKE DUPLICATE RECOVERY:	A	89	83	7



LABORATORY NUMBER: 206897  
CLIENT: ICF KAISER ENGINEERS

PAGE 3 OF 7  
DATE SAMPLED: 06/09/93  
DATE EXTRACTED: 06/16/93  
DATE ANALYZED: SEE BELOW

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

MATRIX: LIQUID  
METHOD: DHS LUFT PROCEDURE (MOD. 8015)  
EXTRACTION: EPA 3510 LIQUID-LIQUID EXTRACTION

LAB ID	SAMPLE ID	GASOLINE (ug/L)	KEROSENE (ug/L)	DIESEL (ug/L)	DATE RUN	SURROGATE % REC. BRO HEX	QC ID
001	PW-4-09	ND	ND	ND	06/17	90 98	A
METHOD BLANK		ND	ND	ND	06/17	98 106	A

DETECTION LIMIT: 500 500 500

QUALITY CONTROL SUMMARY

SURROGATE: BRO = Bromobenzene

HEX = Hexacosane

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD	QC ID BATCH
SPIKE/SPIKE DUPLICATE RECOVERY:	116	108	7	A



LABORATORY NUMBER: 206897-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-4-09

PAGE 4 OF 7  
DATE SAMPLED: 06/09/93  
DATE ANALYZED: 06/23/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	430-b	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	29-a	0.5
trans-1,2-Dichloroethene	2.5	0.5
cis-1,2-Dichloroethene	20-a	0.5
Chloroform	21-a	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	3.9	0.5
Carbon tetrachloride	28-a	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	9,100-c	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	5.7	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	110-a	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

CONTINUED ON NEXT PAGE





LABORATORY NUMBER: 206897-001  
SAMPLE ID: PW-4-09

PAGE 5 OF 7  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	1.0	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

a = 1:25 Dilution run on 06/21/93.  
b = 1:250 Dilution run on 06/21/93.  
c = 1:1,000 Dilution run on 06/21/93.

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 75  
Toluene-d8: 94  
Bromofluorobenzene: 109

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	99		



LABORATORY NUMBER: 206897-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-4-09

PAGE 6 OF 7  
DATE SAMPLED: 06/09/93  
DATE ANALYZED: SEE BELOW

METALS

MATRIX: LIQUID  
METHOD: EPA 6010

METAL	RESULT (ug/L)	DETECTION LIMIT (ug/L)	DATE ANALYZED	METHOD BLANK	QC BATCH
Chromium	300	10	06/17	ND	A
Nickel	410	32	06/17	ND	A

QUALITY CONTROL SUMMARY

	RPD	LCS % REC.	QC BATCH
Chromium	<10	104	A
Nickel	< 2	105	A



LABORATORY NUMBER: 206897-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-4-09

PAGE 7 OF 7  
DATE SAMPLED: 06/09/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Ammonia	ND	0.10	mg/L	EPA 350.1	06/14
Hexavalent Chromium	ND	0.010	mg/L	EPA 7196	06/10
Nitrate/Nitrite	6.9	0.040	mg/L	EPA 353.2	06/12
Turbidity	43	0.040	NTU	EPA 180.1	06/10

QUALITY CONTROL SUMMARY

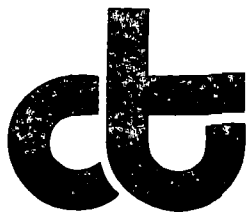
ANALYSIS (units)	SPIKE % REC.	SPIKE DUP. % REC.	RPD
Ammonia (%)	100	102	2
Hexavalent Chromium (%)	99	100	1
Nitrate/Nitrite (%)	115	114	<1
	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD
Turbidity (NTU)	42.6	43.8	3

# ABBREVIATIONS

BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.  
 CCR - California Code of Regulations.  
 DHS - California Department of Health Services.  
 EPA - United States Environmental Protection Agency.  
 LCS - Laboratory Control Spike  
 LUFT - Leaking Underground Fuel Tank.  
 MDL - Method Detection Limit  
 NA - Not Applicable.  
 NC - Not Calculable  
 ND - Not Detected at or above the defined detection limit.  
 PQL - Practical Quantitation Limit  
 RPD - Relative percent difference.  
 STLC - Soluble Threshold Limit Concentration.  
 Surr. - Surrogates.  
 TCLP - Toxicity Characteristic Leaching Procedure.  
 TEH - Total Extractable Petroleum Hydrocarbons.  
 Title 26 - Title 26 of the California Code of Regulations (CCR).  
 TR~ - Trace, estimated value .  
 TTLC - Total Threshold Limit Concentration.  
 TVH - Total Volatile Hydrocarbons.  
 WET - Waste Extraction Test.

# UNITS

cm <sup>3</sup> - Cubic centimeter	lumhos/cm - uS/cm - Micro Siemens/centimeter
Kg - kilogram.	ppb - Parts Per Billion.
L - Liter.	ppm - Parts per Million.
mg - Milligrams.	ug - Micrograms.
M <sup>3</sup> - Cubic meter.	



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2495 Da Vinci, Irvine CA 92714

Phone 714-252-9700

Fax 714-252-9701

ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CA 91608  
ATTN: Nanci BERGE

PAGE 1 OF 12  
DATE RECEIVED: 06/11/93  
DATE REPORTED: 06/25/93

LAB NUMBER: 206914

PROJECT ID: 03827-014-00

REPORT ON: THREE LIQUID SAMPLES ANALYZED AS SPECIFIED ON ATTACHED  
CHAIN OF CUSTODY.

LOCATION: BURBANK-ITT

Reviewed By:

Berkeley

Irvine



LABORATORY NUMBER: 206914  
CLIENT: ICF KAISER ENGINEERS

PAGE 2 OF 12  
DATE SAMPLED: 06/10/93  
DATE ANALYZED: SEE BELOW

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

MATRIX: LIQUID  
METHOD: EPA 418.1

LAB ID	SAMPLE ID	RESULT (mg/L)	DATE ANALYZED	QC BATCH
001	PW-2-09	ND	06/15	A
002	SW-1-09	190	06/15	A
003	SW-2-09	21	06/15	A
METHOD BLANK		ND	06/15	A

DETECTION LIMIT: 1.0

QUALITY CONTROL SUMMARY

	BATCH	SPIKE % REC.	SPIKE DUP. % REC.	RPD
SPIKE/SPIKE DUPLICATE RECOVERY:	A	89	83	7



LABORATORY NUMBER: 206914  
CLIENT: ICF KAISER ENGINEERS

PAGE 3 OF 12  
DATE SAMPLED: 06/10/93  
DATE EXTRACTED: 06/16/93  
DATE ANALYZED: SEE BELOW

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

MATRIX: LIQUID  
METHOD: DHS LUFT PROCEDURE (MOD. 8015)  
EXTRACTION: EPA 3510 LIQUID-LIQUID EXTRACTION

LAB ID	SAMPLE ID	GASOLINE	KEROSENE	DIESEL	DATE RUN	SURROGATE % REC.		QC ID
		(ug/L)	(ug/L)	(ug/L)		BRO	HEX	
001	PW-2-09	ND	ND	1,700**	06/17	108	121	A
002	SW-1-09	ND(50000)*	ND(50000)*	750,000-a	06/17	***	137	A
003	SW-2-09	ND(5000)*	ND(5000)*	68,000-b	06/17	98	115	A
METHOD BLANK		ND	ND	ND	06/17	90	98	A

DETECTION LIMIT: 500 500 500

a = 1:100 Dilution run on 06/17/93.

b = 1:10 Dilution run on 06/17/93.

\* Raised detection limit due to high concentration of diesel in the sample.

\*\* Sample hydrocarbon pattern does not match respective standard fuel pattern.

\*\*\* Sample interference with surrogate.

QUALITY CONTROL SUMMARY

SURROGATE: BRO = Bromobenzene

HEX = Hexacosane

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD	QC ID BATCH
SPIKE/SPIKE DUPLICATE RECOVERY:	116	108	7	A



LABORATORY NUMBER: 206914-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-2-09

PAGE 4 OF 12  
DATE SAMPLED: 06/10/93  
DATE ANALYZED: 06/15/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	0.6	1.0
Chloroethane	0.9	1.0
Methylene chloride	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	24-a	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	14-a	0.5
trans-1,2-Dichloroethene	0.6	0.5
cis-1,2-Dichloroethene	48-a	0.5
Chloroform	ND	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	1.5	0.5
Carbon tetrachloride	ND	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	4.9	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

CONTINUED ON NEXT PAGE





LABORATORY NUMBER: 206914-001  
SAMPLE ID: PW-2-09

PAGE 5 OF 12  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	0.5	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	3.5	0.5
Styrene	ND	0.5
Isopropylbenzene	1.7	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	5.5	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	0.8	0.5
sec-Butylbenzene	2.3	0.5
p-Isopropyltoluene	1.8	0.5
n-Butylbenzene	1.5	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	7.6	0.5
1,2,3-Trichlorobenzene	ND	0.5

a = 1:10 Dilution run on 06/21/93.

#### QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 114  
Toluene-d8: 102  
Bromofluorobenzene: 103

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	94		



LABORATORY NUMBER: 206914-002  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: SW-1-09

PAGE 6 OF 12  
DATE SAMPLED: 06/10/93  
DATE ANALYZED: 06/15/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	1.6	1.0
Chloroethane	ND	1.0
Methylene chloride	120-c	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	4,900-d	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	760-a	0.5
trans-1,2-Dichloroethene	15-b	0.5
cis-1,2-Dichloroethene	140-c	0.5
Chloroform	27-b	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	18-b	0.5
1,1,1-Trichloroethane	7,100-e	0.5
Carbon tetrachloride	0.6	0.5
Bromochloromethane	0.6	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	21,000-e	0.5
Bromodichloromethane	2.0	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	12-b	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	0.8	0.5
1,1,1,2-Tetrachloroethane	0.9	0.5
Tetrachloroethene	430-a	0.5
Dibromochloromethane	2.9	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

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LABORATORY NUMBER: 206914-002  
SAMPLE ID: SW-1-09

PAGE 7 OF 12  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	6.6	0.5
Toluene	22-b	0.5
Ethylbenzene	2.7	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	0.6	0.5
m,p-Xylene	18	0.5
o-Xylene	14-b	0.5
Styrene	ND	0.5
Isopropylbenzene	2.8	0.5
n-Propylbenzene	3.2	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	11-b	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	4.5	0.5
1,2,4-Trimethylbenzene	31-b	0.5
sec-Butylbenzene	2.2	0.5
p-Isopropyltoluene	5.4	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	47-c	0.5
1,2,3-Trichlorobenzene	ND	0.5

a = 1:250 Dilution run on 06/19/93.  
b = 1:5 Dilution run on 06/23/93.  
c = 1:25 Dilution run on 06/23/93.  
d = 1:500 Dilution run on 06/20/93.  
e = 1:5000 Dilution run on 06/21/93.

#### QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 90  
Toluene-d8: 97  
Bromofluorobenzene: 111

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	94		



LABORATORY NUMBER: 206914-003  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: SW-2-09

PAGE 8 OF 12  
DATE SAMPLED: 06/10/93  
DATE ANALYZED: 06/15/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	2.2	1.0
Chloroethane	0.6	1.0
Methylene chloride	38-a	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	780-b	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	650-b	0.5
trans-1,2-Dichloroethene	ND	0.5
cis-1,2-Dichloroethene	2,300-b	0.5
Chloroform	240-a	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	4.8	0.5
1,1,1-Trichloroethane	2,000-b	0.5
Carbon tetrachloride	2.2	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	4.6	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	13,000-c	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	25-a	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	92-a	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

CONTINUED ON NEXT PAGE



LABORATORY NUMBER: 206914-003  
SAMPLE ID: SW-2-09

PAGE 9 OF 12  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	25-a	0.5
Toluene	5.7	0.5
Ethylbenzene	2.6	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	16	0.5
o-Xylene	26-a	0.5
Styrene	ND	0.5
Isopropylbenzene	6.3	0.5
n-Propylbenzene	4.1	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	5.6	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	4.3	0.5
1,2,4-Trimethylbenzene	27-a	0.5
sec-Butylbenzene	2.8	0.5
p-Isopropyltoluene	2.9	0.5
n-Butylbenzene	2.0	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	100-a	0.5
1,2,3-Trichlorobenzene	ND	0.5

a = 1:25 Dilution run on 06/23/93.  
b = 1:250 Dilution run on 06/19/93.  
c = 1:2,500 Dilution run on 06/21/93.

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 75  
Toluene-d8: 95  
Bromofluorobenzene: 96

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	101
LABORATORY CONTROL SAMPLE (LCS):	94		



LABORATORY NUMBER: 206914-002  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: SW-1-09

PAGE 10 OF 12  
DATE SAMPLED: 06/10/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Ammonia	5.3	0.10	mg/L	EPA 350.1	06/14
Nitrate/Nitrite	2.7	0.040	mg/L	EPA 353.2	06/12

QUALITY CONTROL SUMMARY

ANALYSIS (units)	SPIKE % REC.	SPIKE DUP. % REC.	RPD
Ammonia (%)	92	96	4
Nitrate/Nitrite (%)	79	79	<1



LABORATORY NUMBER: 206914-003  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: SW-2-09

PAGE 11 OF 12  
DATE SAMPLED: 06/10/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Ammonia	1.5	0.10	mg/L	EPA 350.1	06/14
Nitrate/Nitrite	ND	0.040	mg/L	EPA 353.2	06/12

QUALITY CONTROL SUMMARY

ANALYSIS (units)	SPIKE % REC.	SPIKE DUP. % REC.	RPD
Ammonia (%)	92	96	4
Nitrate/Nitrite (%)	79	79	<1



LABORATORY NUMBER: 206914  
CLIENT: ICF KAISER ENGINEERS

PAGE 12 OF 12  
DATE SAMPLED: 06/10/93  
DATE ANALYZED: SEE BELOW

TURBIDITY

MATRIX: LIQUID  
METHOD: EPA 180.1

LAB ID	SAMPLE ID	RESULT (NTU)	DATE ANALYZED	QC BATCH
001	PW-2-09	100	06/12	A
002	SW-1-09	420	06/12	A
003	SW-2-09	74	06/12	A

DETECTION LIMIT: 0.040

QUALITY CONTROL SUMMARY

	QC BATCH	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD
SAMPLE/SAMPLE DUPLICATE DATA:	A	102.5	100.5	2



# ABBREVIATIONS

BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.

CCR - California Code of Regulations.

DHS - California Department of Health Services.

EPA - United States Environmental Protection Agency.

LCS - Laboratory Control Spike

LUFT - Leaking Underground Fuel Tank.

MDL - Method Detection Limit

NA - Not Applicable.

NC - Not Calculable

ND - Not Detected at or above the defined detection limit.

PQL - Practical Quantitation Limit

RPD - Relative percent difference.

STLC - Soluble Threshold Limit Concentration.

Surr. - Surrogates.

TCLP - Toxicity Characteristic Leaching Procedure.

TEH - Total Extractable Petroleum Hydrocarbons.

Title 26 - Title 26 of the California Code of Regulations (CCR).

TR~ - Trace, estimated value .

TTLC - Total Threshold Limit Concentration.

TVH - Total Volatile Hydrocarbons.

WET - Waste Extraction Test.

# UNITS

cm <sup>3</sup> - Cubic centimeter	lumhos/cm - uS/cm - Micro Siemens/centimeter
Kg - kilogram.	ppb - Parts Per Billion.
L - Liter.	ppm - Parts per Million.
mg - Milligrams.	ug - Micrograms.
M <sup>3</sup> - Cubic meter.	



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Curtis & Tompkins, Ltd. General Analytical Laboratories

2495 Da Vinci, Irvine CA 92714

Phone 714-252-9700

Fax 714-252-9701

ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CA 91608  
ATTN: Nanci BERGE

PAGE 1 OF 18  
DATE RECEIVED: 06/11/93  
DATE REPORTED: 06/25/93

LAB NUMBER: 206919

PROJECT ID: 03827-014-00

REPORT ON: FIVE LIQUID SAMPLES ANALYZED AS SPECIFIED ON ATTACHED  
CHAIN OF CUSTODY.

LOCATION: BURBANK-ITT

Reviewed By:



LABORATORY NUMBER: 206919  
CLIENT: ICF KAISER ENGINEERS

PAGE 2 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: SEE BELOW

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

MATRIX: LIQUID  
METHOD: EPA 418.1

LAB ID	SAMPLE ID	RESULT (mg/L)	DATE ANALYZED	QC BATCH
001	PW-5-09	ND	06/15	A
002	PW-5-09D	ND	06/15	A
004	PW-3-09	ND	06/15	A
METHOD BLANK		ND	06/15	A

DETECTION LIMIT: 1.0

QUALITY CONTROL SUMMARY

	BATCH	SPIKE % REC.	SPIKE DUP. % REC.	RPD
SPIKE/SPIKE DUPLICATE RECOVERY:	A	89	83	7



LABORATORY NUMBER: 206919  
CLIENT: ICF KAISER ENGINEERS

PAGE 3 OF 18  
DATE SAMPLED: 06/11/93  
DATE EXTRACTED: 06/16/93  
DATE ANALYZED: SEE BELOW

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

MATRIX: LIQUID  
METHOD: DHS LUFT PROCEDURE (MOD. 8015)  
EXTRACTION: EPA 3510 LIQUID-LIQUID EXTRACTION

LAB ID	SAMPLE ID	GASOLINE (ug/L)	KEROSENE (ug/L)	DIESEL (ug/L)	DATE RUN	SURROGATE % REC. BRO HEX	QC ID
001	PW-5-09	ND	ND	850	06/17	96 100	A
002	PW-5-09D	ND	ND	ND	06/17	91 96	A
004	PW-3-09	ND	ND	ND	06/17	100 105	A
METHOD BLANK		ND	ND	ND	06/17	90 98	A

DETECTION LIMIT: 500 500 500

QUALITY CONTROL SUMMARY

SURROGATE: BRO = Bromobenzene

HEX = Hexacosane

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD	QC ID BATCH
SPIKE/SPIKE DUPLICATE RECOVERY:	116	108	7	A



LABORATORY NUMBER: 206919-004  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-3-09

PAGE 4 OF 18  
DATE SAMPLED: 06/11/93  
DATE EXTRACTED: 06/16/93  
DATE ANALYZED: 06/16/93

POLYCHLORINATED BIPHENYL'S

MATRIX: LIQUID  
METHOD: EPA 8080  
EXTRACTION: EPA 3510 LIQUID-LIQUID EXTRACTION

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY (decachlorobiphenyl): 78

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	69	73	6



LABORATORY NUMBER: 206919-005  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-3-09D

PAGE 5 OF 18  
DATE SAMPLED: 06/11/93  
DATE EXTRACTED: 06/16/93  
DATE ANALYZED: 06/16/93

POLYCHLORINATED BIPHENYL'S

MATRIX: LIQUID  
METHOD: EPA 8080  
EXTRACTION: EPA 3510 LIQUID-LIQUID EXTRACTION

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY (decachlorobiphenyl): 80

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	69	73	6



LABORATORY NUMBER: 206919-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-5-09

PAGE 6 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: 06/18/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	6.6	0.5
Trichlorofluoromethane	1.3	0.5
1,1-Dichloroethene	1,100-b	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	130-a	0.5
trans-1,2-Dichloroethene	3.0	0.5
cis-1,2-Dichloroethene	52-a	0.5
Chloroform	71-a	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	390-b	0.5
Carbon tetrachloride	4.8	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	2,300-b	0.5
Bromodichloromethane	0.9	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	46-a	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	0.9	0.5
Tetrachloroethene	320-b	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

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LABORATORY NUMBER: 206919-001  
SAMPLE ID: PW-5-09

PAGE 7 OF 18  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	3.3	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

a = 1:25 Dilution run on 06/21/93.  
b = 1:500 Dilution run on 06/21/93.

#### QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 105  
Toluene-d8: 102  
Bromofluorobenzene: 110

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	109		





LABORATORY NUMBER: 206919-002  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-5-09D

PAGE 8 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: 06/18/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	5.9	0.5
Trichlorofluoromethane	1.2	0.5
1,1-Dichloroethene	160-a	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	64-c	0.5
trans-1,2-Dichloroethene	2.6	0.5
cis-1,2-Dichloroethene	27-b	0.5
Chloroform	38-b	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	9.1-b	0.5
1,1,1-Trichloroethane	110-c	0.5
Carbon tetrachloride	4.2	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	1,700-a	0.5
Bromodichloromethane	0.8	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	42-b	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	0.7	0.5
Tetrachloroethene	64-b	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

CONTINUED ON NEXT PAGE



LABORATORY NUMBER: 206919-002  
SAMPLE ID: PW-5-09D

PAGE 9 OF 18  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	3.0	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

a = 1:250 Dilution run on 06/21/93.  
b = 1:5 Dilution run on 06/23/93.  
c = 1:25 Dilution run on 06/23/93.

#### QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 103  
Toluene-d8: 102  
Bromofluorobenzene: 104

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	109		



LABORATORY NUMBER: 206919-003  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-3-09B

PAGE 10 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: 06/20/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	ND	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	ND	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

CONTINUED ON NEXT PAGE



LABORATORY NUMBER: 206919-003  
SAMPLE ID: PW-3-09B

PAGE 11 OF 18  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	1.9	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 98  
Toluene-d8: 101  
Bromofluorobenzene: 98

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	109		



LABORATORY NUMBER: 206919-004  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-3-09

PAGE 12 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: 06/19/93

VOLATILE ORGANICS

MATRIX: LIQUID  
METHOD: EPA 524.2  
EXTRACTION: EPA 5030 PURGE AND TRAP

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Chloromethane	ND	1.0
Dichlorodifluoromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl chloride	ND	1.0
Chloroethane	ND	1.0
Methylene chloride	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	ND	0.5
Freon 113	ND	0.5
1,1-Dichloroethane	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
cis-1,2-Dichloroethene	0.6	0.5
Chloroform	0.6	0.5
2,2-Dichloropropane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	0.5
Bromochloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
1,1-Dichloropropene	ND	0.5
Trichloroethene	4.4	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	1.0
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
1,3-Dichloropropane	ND	0.5
Dibromomethane	ND	0.5
Bromoform	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
1,2-Dibromo-3-chloropropane	ND	0.5
Hexachlorobutadiene	ND	0.5

CONTINUED ON NEXT PAGE



LABORATORY NUMBER: 206919-004  
SAMPLE ID: PW-3-09

PAGE 13 OF 18  
EPA 524.2 CONTINUED

COMPOUND	RESULT (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Chlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
m,p-Xylene	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Isopropylbenzene	ND	0.5
n-Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	0.6	0.5
p-Isopropyltoluene	ND	0.5
n-Butylbenzene	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Naphthalene	0.9	0.5
1,2,3-Trichlorobenzene	ND	0.5

QUALITY CONTROL SUMMARY

SURROGATE PERCENT RECOVERY - 1,2-Dichloroethane-d4: 107  
Toluene-d8: 103  
Bromofluorobenzene: 102

	SPIKE % REC.	SPIKE DUP. % REC.	AVG. RPD
AVERAGE SPIKE/SPIKE DUPLICATE RECOVERY:	103	102	<1
LABORATORY CONTROL SAMPLE (LCS):	109		



LABORATORY NUMBER: 206919  
CLIENT: ICF KAISER ENGINEERS

PAGE 14 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: SEE BELOW

TOTAL CHROMIUM

MATRIX: LIQUID  
METHOD: EPA 6010

LAB ID	SAMPLE ID	RESULT (ug/L)	DATE ANALYZED	QC BATCH
001	PW-5-09	1,400	06/17	A
METHOD BLANK		ND	06/17	A

DETECTION LIMIT: 10

QUALITY CONTROL SUMMARY

	QC BATCH	LCS % RECOVERY	RPD
LABORATORY CONTROL SAMPLE:	A	104	
SAMPLE/SAMPLE DUPLICATE RPD:	A		10



LABORATORY NUMBER: 206919  
CLIENT: ICF KAISER ENGINEERS

PAGE 15 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: SEE BELOW

HEXAVALENT CHROMIUM

MATRIX: LIQUID  
METHOD: EPA 7196

LAB ID	SAMPLE ID	RESULT (mg/L)	DATE ANALYZED	QC BATCH
001	PW-5-09	1.4	06/12	A
002	PW-5-09D	1.3	06/12	A
METHOD BLANK		ND	06/12	A

DETECTION LIMIT: 0.010

QUALITY CONTROL SUMMARY

	QC BATCH	SPIKE % REC.	SPIKE DUP. % REC.	RPD
SPIKE/SPIKE DUPLICATE DATA:	A	96	100	4





LABORATORY NUMBER: 206919-001  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-5-09

PAGE 16 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Ammonia	1.8	0.10	mg/L	EPA 350.1	06/14
Nitrate/Nitrite	17	0.040	mg/L	EPA 353.2	06/12
Turbidity	67	0.040	NTU	EPA 180.1	06/12

QUALITY CONTROL SUMMARY

ANALYSIS (units)	SPIKE % REC.	SPIKE DUP. % REC.	RPD
Ammonia (%)	100	104	4
Nitrate/Nitrite (%)	117	122	4

	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD
Turbidity (NTU)	66.8	67.6	1



LABORATORY NUMBER: 206919-002  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-5-09D

PAGE 17 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Ammonia	2.1	0.10	mg/L	EPA 350.1	06/14
Nitrate/Nitrite	18	0.040	mg/L	EPA 353.2	06/12
Turbidity	54	0.040	NTU	EPA 180.1	06/12

QUALITY CONTROL SUMMARY

ANALYSIS (units)	SPIKE % REC.	SPIKE DUP. % REC.	RPD
Ammonia (%)	100	104	4
Nitrate/Nitrite (%)	117	122	4

	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD
Turbidity (NTU)	66.8	67.6	1



LABORATORY NUMBER: 206919-004  
CLIENT: ICF KAISER ENGINEERS  
SAMPLE ID: PW-3-09

PAGE 18 OF 18  
DATE SAMPLED: 06/11/93  
DATE ANALYZED: SEE BELOW

GENERAL CHEMISTRY

MATRIX: LIQUID

ANALYSIS	RESULT	DETECTION LIMIT	UNITS	METHOD	DATE ANALYZED
Turbidity	2.3	0.040	NTU	EPA 180.1	06/12

QUALITY CONTROL SUMMARY

ANALYSIS (units)	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD
Turbidity (NTU)	66.8	67.6	1

# ABBREVIATIONS

BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.  
 CCR - California Code of Regulations.  
 DHS - California Department of Health Services.  
 EPA - United States Environmental Protection Agency.  
 LCS - Laboratory Control Spike  
 LUFT - Leaking Underground Fuel Tank.  
 MDL - Method Detection Limit  
 NA - Not Applicable.  
 NC - Not Calculable  
 ND - Not Detected at or above the defined detection limit.  
 PQL - Practical Quantitation Limit  
 RPD - Relative percent difference.  
 STLC - Soluble Threshold Limit Concentration.  
 Surr. - Surrogates.  
 TCLP - Toxicity Characteristic Leaching Procedure.  
 TEH - Total Extractable Petroleum Hydrocarbons.  
 Title 26 - Title 26 of the California Code of Regulations (CCR).  
 TR~ - Trace, estimated value .  
 TTLC - Total Threshold Limit Concentration.  
 TVH - Total Volatile Hydrocarbons.  
 WET - Waste Extraction Test.

# UNITS

cm <sup>3</sup> - Cubic centimeter	umhos/cm - uS/cm - Micro Siemens/centimeter
Kg - kilogram.	ppb - Parts Per Billion.
L - Liter.	ppm - Parts per Million.
mg - Milligrams.	ug - Micrograms.
M <sup>3</sup> - Cubic meter.	

# ICF KAISER ENGINEERS

## CHAIN OF CUSTODY RECORD

No 0909

FOR LABORATORY USE ONLY

Laboratory Project No.: 206881 Secured: \_\_\_\_\_  
Storage Refrigerator ID: \_\_\_\_\_ Yes \_\_\_\_\_  
Storage Freezer ID: \_\_\_\_\_ No \_\_\_\_\_

Project Name: BURBANK - ITT Project #: 03827 Sampler: MAULEY TOM  
Relinquished by: (Signature and Printed Name) [Signature] Received by: (Signature and Printed Name) [Signature] Date: 6-9-93 Time: 1153  
Relinquished by: (Signature and Printed Name) [Signature] Received by: (Signature and Printed Name) [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

SHIP TO LAB:				Method of Shipment:		Circle or Add Analysis(es) Requested																Container(s)		FOR LAB USE ONLY			
CUATS-TOMP KINS				LAB #																							
Shipment ID:																											
Sample ID Number	Date	Time	Description	801/8010 (Halogenated Volatiles-GC)	802/8020 (Aromatic Volatiles-GC)	804/8040 (Phenols-GC)	808/8080 (Pesticides/PCB-GC)	610/6100 (PNA-GC)	825/8250 (Volatiles-GC/MS)	TPH/G (BNA-GC/MS)	TPH/D (Gasoline-GC)	418/1 (TPH-IR)	8015 (Diesel-GC)	Metals-Total (GC)	Metals-Soluble (GC)	Fluoride-Soluble	Chloride / pH	TDS / Percent Solid	Specific Conductivity (EC)	Nitrate	Nitrite	Ammonia	Turbidity	TAT	#	Type	Lab ID
1	PW-1-09	6/8/93	12:42	G Water, HCL				X																3	3	V	
2				H <sub>2</sub> SO <sub>4</sub>														X	X	X				1	1	O	
3				HNO <sub>3</sub>										X										1	1	O	
4																					X			1	1	O	
5	PW-6-09		16:01	G Water, HCL				X																3	3	V	
6																								1	1	O	
7				H <sub>2</sub> SO <sub>4</sub>														X	X	X				1	1	O	
8				HNO <sub>3</sub>										X										1	1	O	
9	PW-6-09			G Water, HNO <sub>3</sub>										X										1	1	O	
10	TR: POK							X																3	3	V	

Special Instructions/Comments: \_\_\_\_\_ Sample Archive/Disposal: \_\_\_\_\_  
☐ Laboratory Standard  
☐ Other \_\_\_\_\_

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks  
 Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette  
 O=Other plastic

SEND DOCUMENTATION AND RESULTS TO:  
 ATTENTION: NANCI BENGE

ICF KAISER ENGINEERS  
 10 UNIVERSAL CITY PLAZA  
 SUITE 2400  
 UNIVERSAL CITY, CALIFORNIA 91608  
 (818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: \_\_\_\_\_

# ICF KAISER ENGINEERS

## CHAIN OF CUSTODY RECORD

No 0910

FOR LABORATORY USE ONLY

Laboratory Project No.: 206897 Secured: \_\_\_\_\_  
Storage Refrigerator ID: WALK IN Yes \_\_\_\_\_  
Storage Freezer ID: NA No \_\_\_\_\_

Project Name: Burbank Project #: 03827-014-00 Sampler: F.D. Van Newkirk 6/9/93 F.D. Van Newkirk  
(Printed Name) (Signature)

Relinquished by: Nanci Berge Received by: CHRISTOPHER L. OSBURN Date: 10 June 93 Time: 0953  
(Signature and Printed Name) (Signature and Printed Name) (Date) (Time)

Relinquished by: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

SHIP TO LAB:				Method of Shipment: <u>pickup</u>		Shipment ID: _____		Circle or Add Analysis(es) Requested															a=Identify specific metals requested under Special Instructions					
Sample ID Number	Sample Description			801/8010 (Halogenated Volatiles-GC) 802/8020 (Aromatic Volatiles-GC) 804/8040 (Phenols-GC) 808/8080 (Pesticides/PCB-GC) 610/8100 (PMA-GC) 624/8240 (Volatiles-GC/MS) 625/8270 (BNA-GC/MS) TPH/G (Gasoline-GC) TPH/D (Diesel-GC) 418-1 (TPH-IR) 8015 Modified (GC) Metals-Total Metals-Soluble Fluoride/Nitrate Chloride/pH TDS/Percent Solid Specific Conductivity (EC)													Container(s)		FOR LAB USE ONLY									
	Date	Time	Description														TAT	#	Type	Lab ID								
1	PW-4-09	6/9	1525 groundwater					X																4	3	✓		
2	PW-4-09	6/9	1525 groundwater											X											4	1	A	
3	PW-4-09	6/9	1525 groundwater												X										4	1	A	
4	PW-4-09	6/9	1525 groundwater													X									4	1	O	
5	PW-4-09	6/9	1525 groundwater															X							1	1	O	
6	PW-4-09	6/9	1525 groundwater																X						4	1	O	
7																												
8																												
9																												
10																												

Special Instructions/Comments: \_\_\_\_\_ Sample Archive/Disposal: \_\_\_\_\_  
☐ Laboratory Standard  
☐ Other \_\_\_\_\_

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks  
 Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette  
 O=Other plastic

SEND DOCUMENTATION AND RESULTS TO:  
 ATTENTION: Nanci Berge

ICF KAISER ENGINEERS  
 10 UNIVERSAL CITY PLAZA  
 SUITE 2400  
 UNIVERSAL CITY, CALIFORNIA 91608  
 (818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt. \_\_\_\_\_

# ICF KAISER ENGINEERS

## CHAIN OF CUSTODY RECORD

No 0911

### FOR LABORATORY USE ONLY

Laboratory Project No.: \_\_\_\_\_ Secured: \_\_\_\_\_  
Storage Refrigerator ID: \_\_\_\_\_ Yes \_\_\_\_\_  
Storage Freezer ID: \_\_\_\_\_ No \_\_\_\_\_

Project Name: ITT Burbank Project #: 03827-014-00 Sampler: T.D. Van Newkirk 6/10/93 T.D. Van Newkirk

Relinquished by: (Signature and Printed Name) STANLEY TOM Received by: (Signature and Printed Name) CHARLES OSBURN Date: 6/11/93 Time: 1027

Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

### SHIP TO LAB:

Method of Shipment: pickup

Shipment ID: \_\_\_\_\_

Circle or Add  
Analysis(es)  
Requested

601/8010 (Halogenated Volatiles-GC)  
602/8020 (Aromatic Volatiles-GC)  
604/8040 (Phenols-GC)  
608/8080 (Pesticides/PCB-GC)  
610/8100 (PNA-GC)  
601/8010 (Volatiles-GC/MS)  
625/8250 (BNA-GC/MS)  
TPH/G (Gasoline-GC)  
TPH/D (Diesel-GC)  
418/1 (TPH-IR)  
8015 Modified (GC)  
Metals: Total •  
Metals: Soluble •  
Phosphate Nitrate  
Chloride/pH  
TDS/Percent Solid  
Specific Conductivity (EC)  
Turbidity

a=Identify specific metals  
requested under Special  
Instructions

Sample ID Number	Sample Description			TAT	Container(s)		FOR LAB USE ONLY
	Date	Time	Description		#	Type	
1	PW-2-09	6/10	1025 groundwater	4	3	V	
2	PW-2-09	6/10	1025 groundwater	4	1	A	
3	PW-2-09	6/10	1025 groundwater	4	1	A	
4	PW-2-09	6/10	1025 groundwater	1	1	O	*24 HR TAT
5	SW-1-09	6/10	1355 groundwater	4	3	V	
6	SW-1-09	6/10	1355 groundwater	4	1	A	
7	SW-1-09	6/10	1355 groundwater	4	1	A	
8	SW-1-09	6/10	1355 groundwater	1	1	O	*24 HR TAT
9	SW-1-09	6/10	1355 groundwater	4	1	O	
10	SW-2-09	6/10	1755 groundwater	4	3	V	

Special Instructions/Comments: \_\_\_\_\_ Sample Archive/Disposal: \_\_\_\_\_

☐ Laboratory Standard  
☐ Other \_\_\_\_\_

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks

Container Types: B=Brass Tube, V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette

O=Other plastic

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Nanci Berge  
ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CALIFORNIA 91608  
(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: LAB# 206914

# ICF KAISER ENGINEERS CHAIN OF CUSTODY RECORD

No 0912

FOR LABORATORY USE ONLY

Laboratory Project No.: \_\_\_\_\_ Secured: \_\_\_\_\_  
Storage Refrigerator ID: \_\_\_\_\_ Yes \_\_\_\_\_  
Storage Freezer ID: \_\_\_\_\_ No \_\_\_\_\_

Project Name: ITT Burbank Project #: 03827-014-00 Sampler: LAURA BOYLES Laura D. Boyles  
Relinquished by: (Signature and Printed Name) Laura D. Boyles Received by: (Signature and Printed Name) Chris Osburn Date: 6-11-93 Time: 1030  
Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Received by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

SHIP TO LAB:

Method of Shipment:

pickup

Shipment ID: \_\_\_\_\_

Circle or Add  
Analysis(es)  
Requested

801/8010 (Halogenated Volatiles-GC)	802/8020 (Aromatic Volatiles-GC)	804/8040 (Phenols-GC)	808/8080 (Pesticides/PCB-GC)	610/6100 (PNA-GC)	624/6240 (Volatiles-GC/MS)	825/8270 (BNA-GC/MS)	TPH/G (Gasoline-GC)	TPH/D (Diesel-GC)	418.1 (TPH-IR)	8015 Modified (GC)	Metals Total *	Metals Soluble *	Ammonia Nitrate	Chloride/PH	TDS/Percent Solid	Specific Conductivity (EC)	Viscosity	Ammonia
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a=Identify specific metals  
requested under Special  
Instructions

Sample ID Number	Sample Description																						Container(s)		FOR LAB USE ONLY	
	Date	Time	Description	801/8010	802/8020	804/8040	808/8080	610/6100	624/6240	825/8270	TPH/G	TPH/D	418.1	8015	Metals Total	Metals Soluble	Ammonia Nitrate	Chloride/PH	TDS/Percent Solid	Specific Conductivity (EC)	Viscosity	Ammonia	TAT	#	Type	Lab ID
1	SW-2-09	6/10	1755	groundwater								X											4	1	A	
2	SW-2-09	6/10	1755	groundwater								X											4	1	A	
3	SW-2-09	6/10	↓	groundwater											X								4	1	O	
4	SW-2-09	6/10	↓	groundwater															X				1	1	O	* 24 HR TAT
5																										
6																										
7																										
8																										
9																										
10																										

Special Instructions/Comments: \_\_\_\_\_ Sample Archive/Disposal: \_\_\_\_\_

☐ Laboratory Standard  
☐ Other \_\_\_\_\_

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks

Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette

O=Other plastic

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Nanci Berge  
ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CALIFORNIA 91608  
(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: Lab #206914



# ICF KAISER ENGINEERS

## CHAIN OF CUSTODY RECORD

206919

No 0913

### FOR LABORATORY USE ONLY

Laboratory Project No.: \_\_\_\_\_ Secured: \_\_\_\_\_  
Storage Refrigerator ID: \_\_\_\_\_ Yes \_\_\_\_\_  
Storage Freezer ID: \_\_\_\_\_ No \_\_\_\_\_

Project Name: ITT Burbank Project #: 03887-014-00 Sampler: T.D. VanNewkirk 6/11/93 T.D. VanNewkirk  
(Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) T.D. VanNewkirk Received by: (Signature and Printed Name) CHRIS OSBURN Date: 6-11-93 Time: 1700  
(Signature) (Signature)

Relinquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:

### SHIP TO LAB:

Method of Shipment:

pick up

Shipment ID:

Circle or Add  
Analysis(es)  
Requested

801/8010 (Halogenated Volatiles-GC)	602/8020 (Aromatic Volatiles-GC)	804/8040 (Phenols-GC)	608/8080 (Pesticides/PCB-GC)	610/8100 (PNA-GC)	604/8040 (Aromatic Volatiles-GC/MS)	603/8030 (BNA-GC/MS)	TPH/G (Gasoline-GC)	TPH/D (Diesel-GC)	418.1 (TPH-IR)	8015 Modified (GC)	Metals Total - C.F.	Metals Soluble - C.F.	Ammonia/Nitrate	Chloride/PH	TDS/Percent Solid	Specific Conductivity (EC)	Acidity/Alkalinity	Stability + C.F.
-------------------------------------	----------------------------------	-----------------------	------------------------------	-------------------	-------------------------------------	----------------------	---------------------	-------------------	----------------	--------------------	---------------------	-----------------------	-----------------	-------------	-------------------	----------------------------	--------------------	------------------

a=Identify specific metals  
requested under Special  
Instructions

Sample ID Number	Sample Description																			Container(s)		FOR LAB USE ONLY				
	Date	Time	Description	801/8010 (Halog)	802/8020 (Mnomo)	804/8040 (Phen)	808/8080 (Pest)	610/8100 (PNA)	803/8030 (Polar)	TPH/G (Gasoline)	TPH/D (Diesel)	418.1 (TPH/IP)	8015 Modified (C)	Metals - Total	Metals - Soluble	Ammonia/Nitrate	Chloride/PH	TDS/Percent Solid	Specific Conduct	Acidity/Alkalinity	Stability	TAT	#	Type	Lab ID	
1	PW-5-09	6/11	1320 groundwater					X															4	3	V	
2	PW-5-09	6/11	1320 groundwater							X													4	1	A	
3	PW-5-09	6/11	1320 groundwater								X												4	1	A	
4	PW-5-09	6/11	1320 groundwater										/										4	1	O	
5	PW-5-09	6/11	1320 groundwater												X								4	1	O	
6	PW-5-09	6/11	1320 groundwater															X					1	1	O	
7	PW-5-09D	6/11	1320 groundwater					X															4	3	V	
8	PW-5-09D	6/11	1320 groundwater							X													4	1	A	
9	PW-5-09D	6/11	1320 groundwater								X												4	1	A	
10	PW-5-09D	6/11	1320 groundwater												X								4	1	O	

Special Instructions/Comments:

Sample Archive/Disposal:

☐ Laboratory Standard

☐ Other

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks

Container Types: B=Brass Tube V=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette

O=Other plastic

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Nanci Berge

ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CALIFORNIA 91608  
(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt:

# ICF KAISER ENGINEERS

## CHAIN OF CUSTODY RECORD

No 0914

### FOR LABORATORY USE ONLY

Laboratory Project No.: \_\_\_\_\_ Secured: \_\_\_\_\_  
Storage Refrigerator ID: \_\_\_\_\_ Yes \_\_\_\_\_  
Storage Freezer ID: \_\_\_\_\_ No \_\_\_\_\_

Project Name: FTT Burbank Project #: 03827-014-00 Sampler: Laura Boyles 6/11/93 Sharon Boyles  
(Printed Name) (Signature)

Relinquished by: Sharon Boyles LAURA D. BOYLES Received by: Chris Osburn Date: 6-11-93 Time: 1700  
(Signature and Printed Name) (Signature and Printed Name)

Relinquished by: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
(Signature and Printed Name) (Signature and Printed Name)

Relinquished by: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
(Signature and Printed Name) (Signature and Printed Name)

Relinquished by: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
(Signature and Printed Name) (Signature and Printed Name)

### SHIP TO LAB:

Method of Shipment:

pickup

Shipment ID: \_\_\_\_\_

Circle or Add  
Analysis(es)  
Requested

601/8010 (Halogenated Volatiles-GC)	
602/8020 (Aromatic Volatiles-GC)	
604/8040 (Phenols-GC)	
606/8060 (PCB-GC)	
610/8100 (PNA-GC)	
625/8250 (Volatiles-GC/MS)	
TPH/G (Gasoline-GC/MS)	
TPH/D (Diesel-GC)	
418/TPH-IP	
8015 Modified (GC)	
Metals: Total *	
Metals: Soluble *	
Fluoride/Nitrate	
Chloride/pH	
TDS/Percent Solid	
Specific Conductivity (EC)	
Turbidity (NTU)	
Acidity (only)	

a=Identify specific metals  
requested under Special  
Instructions

Sample ID Number	Sample Description			TAT	Container(s)		FOR LAB USE ONLY
	Date	Time	Description		#	Type	
1	PW-5-09	6/11 1320	groundwater		1	1	0
2	PW-3-09B	6/11 1435	DI WATER		4	3	✓
3	PW-3-09	6/11 1520	GROUNDWATER		4	1	A
4	PW-3-09	6/11	↓		4	1	A
5	PW-3-09	6/11	↓		1	1	0
6	PW-3-09	6/11	↓		43	1	A
7	PW-3-09D	6/11	↓		43	1	A
8	PW-3-09	6/11					✓
9							
10							

Special Instructions/Comments: \_\_\_\_\_ Sample Archive/Disposal:

☐ Laboratory Standard

☐ Other \_\_\_\_\_

TAT (Analytical Turn-Around Times) 1=24 hours 2=48 hours 3=1 week 4=2 weeks

Container Types: B=Brass Tube Y=VOA Vial A=1-Liter Amber G=Glass Jar C=Cassette

O=Other plastic

SEND DOCUMENTATION AND RESULTS TO:

ATTENTION: Nanci Berger  
ICF KAISER ENGINEERS  
10 UNIVERSAL CITY PLAZA  
SUITE 2400  
UNIVERSAL CITY, CALIFORNIA 91608  
(818) 509-3100 FAX (818) 509-3137

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt:

⑤ added per client request 6/14

## **APPENDIX C**

# **DATA VALIDATION REPORTS**



## ICF TECHNOLOGY INCORPORATED

### DATA VALIDATION REPORT

SITE: ITT Aerospace (ICF Project No. 03827-011-00)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: Volatile Organic Compounds by USEPA Method 524.2  
MATRIX: Waters  
DATE: June 4, 1993

#### I. INTRODUCTION:

Converse Envirolab (Pasadena) received three water samples for volatile organic analyses by USEPA Method 524.2 between March 3-5, 1993. The samples were analyzed by purge and trap gas chromatography/mass spectrometry (GC/MS) between March 9-11, 1993.

The ICF sample numbers are SW-1-08 (Envirolab sample number 93-03-153-02), PW-3-08 (93-03-140-02) and PW-5-08 (93-03-144-03).

The analytical results with qualifications are presented in Table 1A. The sample quantitation limits of the target analytes are provided in Table 2. Listed in Table 3 are the analytes that did not meet the QC acceptance criteria in the initial and continuing calibrations.

This report was prepared according to the USEPA draft document "National Functional Guidelines For Organic Data Review," December, 1990 and USEPA Method 524.2.

#### II. VALIDITY and COMMENTS:

##### A. Technical Holding Times:

A.1 The project chain-of-custody (COC) was not submitted for review. Based upon supporting project documentation, analytical holding time QC criteria were met for all volatile analyses.

##### B. Instrument Tuning:

B.1 The following samples were analyzed outside of the eight-hour tune window associated with instrument performance check analyses performed on March 9 and 10, 1993:

- PW-5-08 (1:1), PW-5-08 (1:100), SW-1-08 (1:100) and PW-3-08 (1:1)

USEPA Method 524.2 specifically requires sample analysis within eight-hours of instrument tuning. These deviations are not expected to adversely affect data quality.

C. Initial Calibration:

C.1 Due to a low average relative response factor (aveRRF) in the initial calibration, the quantitation limits for the following target analyte are considered as estimates (J) and usable for limited purposes only (see Table 2):

- 1,2-Dibromo-3-chloropropane in all samples and method blanks

An aveRRF below the 0.05 advisory QC limit was observed for the above analyte in the initial calibration performed March 9, 1993 (see Table 3). Since the results for this analyte are nondetected, false negatives may exist.

C.2 Due to a large percent relative standard deviation (%RSD) in the initial calibration, the quantitation limits for the following target analyte are considered as estimates (J) and usable for limited purposes only (see Table 2):

- 1,2-Dibromo-3-chloropropane in all samples and method blanks

A %RSD exceeding the <20% advisory QC criteria was observed for the above analyte in the initial calibration performed March 9, 1993 (see Table 3). This deviation is not expected to affect data quality except for the indicated analyte in the samples listed above.

C.3 All other QC criteria for the initial calibration were met for the volatile analyses.

D. Continuing Calibration:

D.1 The following samples were analyzed outside of the eight-hour calibration window associated with instrument calibration verification performed on March 10, 1993.

- PW-5-08 (1:1) and SW-1-08 (1:1)

USEPA Method 524.2 specifically requires the analyses of all samples within eight-hours of instrument calibration. These deviations are not expected to adversely affect data quality.

D.2 Due to a low relative response factor (RRF) in the continuing calibration, the quantitation limits for the following target analyte are considered as estimates (J) and usable for limited purposes only (see Table 2):

- 1,2-Dibromo-3-chloropropane in sample numbers SW-1-08 (1:500), PW-5-08 (1:1), SW-1-08 (1:1) and Method Blank-2

A RRF below the 0.05 advisory QC limit was observed for the above noted analyte in the continuing calibration performed March 10, 1992 (see Table 3). Since the results for this analyte are nondetected, false negatives may exist.

D.3 All other QC criteria for the continuing calibration were met for these analyses.

E. Analytes Present Below the Quantitation Limit:

E.1 Results reported for target analytes that are above the instrument detection limit (IDL) but below the practical quantitation limit (PQL) have been qualified as estimates (J) in Table 1A. These values are considered to be qualitatively acceptable but quantitatively unreliable due to the uncertainty in analytical precision near the limit of detection.

F. Laboratory Blanks:

F.1 The target analytes 1,4-dichlorobenzene and methylene chloride were detected in both associated method blanks (see Table 1A). These compounds were also quantitated above the IDL in the following samples:

- 1,4-Dichlorobenzene and methylene chloride in all project samples

The results for the indicated analytes in the specific samples listed above are considered as nondetected (U). According to the blank qualification rules, the results are reported at the PQL and the PQLs have been adjusted where appropriate.

G. Surrogate Recovery:

G.1 Surrogate recovery QC criteria were met for all volatile analyses.

H. Matrix Spike/Matrix Spike Duplicate Analyses:

H.1 A one hundred-fold dilution of sample number PW-5-08 was utilized for the matrix spike/matrix spike duplicate (MS/MSD) analyses submitted with this project. All accuracy and precision criteria were satisfied for the MS/MSD analyses.

I. Internal Standards:

I.1 Internal standard area QC criteria were met for all volatile analyses.

J. Quantitation and Identification:

J.1 Results reported for target analytes that have been quantitated using responses above the demonstrated calibration range of the instrument have been qualified as estimates "J." These values are considered to be qualitatively acceptable but quantitatively unreliable due to the uncertainty in analytical accuracy at levels exceeding the defined instrument linear range.

J.2 Due to poor GC/MS spectral and/or retention time matching, the following target analyte results reported by the laboratory are considered to be presumptively identified (N):

- Benzene in sample number PW-3-08
- 1,2-Dichloroethane in sample numbers PW-5-08 and SW-1-08

Upon technical review, identification of the above noted compounds for the indicated samples was qualified as tentative and the results are considered usable for limited purposes only (see Tables 1A and 2).

J.3 The analytical result for the following target analyte appears incorrect in both the laboratory report and summary data sheets and this should be noted.

- Methylene chloride in sample number PW-3-08 (1:1)

Based upon the analytical data, the actual target analyte value differed from that reported by the laboratory.

J.4 The following target analyte result was reported by the laboratory in the submitted summary data sheet with an inappropriate "J" qualifier:

- 1,1,2,2-Tetrachloroethane in sample number PW-5-08 (1:1)

Based upon the analytical data, this result was reported above the associated PQL and should not be qualified as quantitatively uncertain.

J.5 The following target analyte results reported by the laboratory in the submitted summary data sheets were inconsistent with those same sample results reported in the submitted laboratory project report:

- 1,2,4-Trimethylbenzene, 1,3,5-trimethylbenzene and o-xylene in sample number PW-5-08 (1:1)

Based upon the analytical data, these results were incorrectly reported as positive detects in the summary data sheets and this should be noted.

J.6 The following target analyte result was reported by the laboratory in the submitted summary data sheets without a corresponding isomeric qualifier:

- 4-Isopropyl toluene in sample number PW-5-08 (1:1) and SW-1-08 (1:1)

Based upon the calibration data, this analyte should be reported using the above noted isomeric designation.

J.7 The following analyte was omitted from the target compound list by the laboratory in the submitted summary data sheets:

- 4-Isopropyl toluene in sample numbers PW-3-08 (1:1), PW-5-08 (1:100) and SW-1-08 (1:500)

Based upon the analytical data, this analyte should be included in all project data sheets.

J.8 No other problems were encountered with analyte identification or quantitation.

K. System Performance:

K.1 There were no problems with system performance observed in this data set.

L. Conclusion:

L.1 Select results are considered presumptive due to GC/MS spectral discrepancies. Additional data are indicated to be estimated due to calibration deficiencies and/or quantitative uncertainties. All other data are considered valid and usable for all purposes.



## ANALYTICAL RESULTS

TABLE 1A\*

PROGRAM: ITT Aerospace (ICF Project No. 03827-011-00)  
 LABORATORY: Converse Envirolab (Pasadena)  
 REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
 DATE: June 4, 1993

Analysis Type: Water Samples for  
 Volatile Organics by  
 USEPA Method 524.2

Concentration in ug/L

ICF Sample ID	SW-1-08			PW-3-08			PW-5-08			Method Blank-1			Method Blank-2			Quantitation Limits		
Envirolab Sample I.D.	93-03-153-02			93-03-140-02			93-03-144-03											
Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Benzene	6.7			0.4	NJ	J	2.6			0.5	U		0.5	U		0.5		
Bromodichloromethane	2.3			0.5	U		0.8			0.5	U		0.5	U		0.5		
n-Butylbenzene	1.9			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
sec-Butylbenzene	1.6			0.3	J	J	0.5	U		0.5	U		0.5	U		0.5		
Carbon Tetrachloride	12			0.5	U		4.1			0.5	U		0.5	U		0.5		
Chloroform	24			1.8			79			0.5	U		0.5	U		0.5		
1,4-Dichlorobenzene	0.5	U	F	0.5	U	F	0.5	U	F	0.3	J		0.2	J		0.5		
1,1-Dichloroethane	510			0.4	J	J	130			0.5	U		0.5	U		0.5		
1,2-Dichloroethane	11	N	J	0.5	U		13	N	J	0.5	U		0.5	U		0.5		
1,1-Dichloroethene	3800			0.5	U		740			0.5	U		0.5	U		0.5		
cis-1,2-Dichloroethene	100	J	J	4.8			40			0.5	U		0.5	U		0.5		
trans-1,2-Dichloroethene	8.0			0.5	U		2.6			0.5	U		0.5	U		0.5		
Ethylbenzene	1.2			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
Isopropylbenzene	2.6			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
4-Isopropyl Toluene	2.9			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
Methylene Chloride	10	U	F	2.0	U	FJ	2.6	U	F	1.0	J		1.9	J		2.0		
Naphthalene	29			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
n-Propylbenzene	2.5			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
1,1,1,2-Tetrachloroethane	0.6			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
1,1,2,2-Tetrachloroethane	0.5	U		0.5	U		0.6			0.5	U		0.5	U		0.5		
Tetrachloroethene	510			0.5	U		240			0.5	U		0.5	U		0.5		
Toluene	2.7			0.5	U		0.5	U		0.5	U		0.5	U		0.5		
1,1,1-Trichloroethane	9300			0.5	U		310			0.5	U		0.5	U		0.5		
1,1,2-Trichloroethane	13			0.5	U		31			0.5	U		0.5	U		0.5		
Trichloroethene	10000			7.2			1800			0.5	U		0.5	U		0.5		
Trichlorofluoromethane	0.4	J		0.5	U		0.6			0.5	U		0.5	U		0.5		
1,2,4-Trimethylbenzene	28			0.5	U		0.5	U	J	0.5	U		0.5	U		0.5		
1,3,5-Trimethylbenzene	12			0.5	U		0.5	U	J	0.5	U		0.5	U		0.5		
o-Xylene	12			0.5	U		0.5	U	J	0.5	U		0.5	U		0.5		
m,p-Xylenes	13			0.5	U		0.5	U		0.5	U		0.5	U		0.5		

\*The other requested analytes were analyzed for, but "Not Detected." The Practical Quantitation Limits are listed in Table 2.

Val-Validity (refer to Data Qualifiers in Table 1B).

Com-Comments (refer to corresponding section in the Narrative for each letter).

TABLE 1B  
DATA QUALIFIERS

NO QUALIFIERS indicates that the data are acceptable both qualitatively and quantitatively.

- U Indicates that the compound is not detected above the concentration listed.
- J Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable.
- N Presumptive evidence of the presence of the material. The compound identification is considered to be tentative. The data are usable for limited purposes.
- R Results are rejected and data are invalid for all purposes.

Method blanks and associated samples:

Method Blank-1 (03/09/93): PW-3-08, PW-5-08 (1:100)

Method Blank-2 (03/10/93): SW-1-08 (1:500), PW-5-08, SW-1-08

TABLE 2  
Sample Quantitation Limits

PROGRAM: ITT Aerospace (ICF Project No. 03827-011-00)  
 LABORATORY: Converse Envirolab (Pasadena)  
 REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
 DATE: June 4, 1993

<u>Volatile Compounds</u>	<u>Units, ug/L</u>	<u>Q</u>	<u>C</u>
Benzene	0.5		
Bromobenzene	0.5		
Bromochloromethane	0.5		
Bromodichloromethane	0.5		
Bromoform	0.5		
Bromomethane	0.5		
n-Butylbenzene	0.5		
sec-Butylbenzene	0.5		
tert-Butylbenzene	0.5		
Carbon Tetrachloride	0.5		
Chlorobenzene	0.5		
Chloroethane	0.5		
Chloroform	0.5		
Chloromethane	0.5		
2-Chlorotoluene	0.5		
4-Chlorotoluene	0.5		
Dibromochloromethane	0.5		
1,2-Dibromo-3-Chloropropane	1	J	CD
1,2-Dibromoethane	1		
Dibromomethane	0.5		
1,2-Dichlorobenzene	0.5		
1,3-Dichlorobenzene	0.5		
1,4-Dichlorobenzene	0.5		
Dichlorodifluoromethane	0.5		
1,1-Dichloroethane	0.5		
1,2-Dichloroethane	0.5		
1,1-Dichloroethene	0.5		
cis-1,2-Dichloroethene	0.5		
trans-1,2-Dichloroethene	0.5		
1,2-Dichloropropane	0.5		
1,3-Dichloropropane	0.5		
2,2-Dichloropropane	0.5		
1,1-Dichloropropene	0.5		
cis-1,3-Dichloropropene	0.5		
trans-1,3-Dichloropropene	0.5		
Ethylbenzene	0.5		
Hexachlorobutadiene	0.5		
Isopropylbenzene	0.5		

Q - Qualifier

C - Comment

Table 2  
(continued)

<u>Volatile Compounds</u>	<u>Units, ug/L</u>	<u>Q</u>	<u>C</u>
4-Isopropyl toluene	0.5		
Methylene Chloride	2		
Naphthalene	0.5		
n-Propylbenzene	0.5		
Styrene	0.5		
1,1,1,2-Tetrachloroethane	0.5		
1,1,2,2-Tetrachloroethane	0.5		
Tetrachloroethene	0.5		
Toluene	0.5		
1,2,3-Trichlorobenzene	0.5		
1,2,4-Trichlorobenzene	0.5		
1,1,1-Trichloroethane	0.5		
1,1,2-Trichloroethane	0.5		
Trichloroethene	0.5		
Trichlorofluoromethane	0.5		
1,2,3-Trichloropropane	0.5		
1,2,4-Trimethylbenzene	0.5		
1,3,5-Trimethylbenzene	0.5		
Vinyl Chloride	0.5		
o-Xylene	0.5		
m,p-Xylenes	0.5		

Q - Qualifier

C - Comment

TABLE 3  
Initial & Continuing Calibrations

PROGRAM: ITT Aerospace (ICF Project No. 03827-011-00)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
DATE: June 4, 1993

Analysis Date:	03/09/93	03/09/93
Associated Samples:	All samples, All method blanks	All samples, All method blanks
Compound:	Initial (aveRRF)	Initial (%RSD)
1,2-Dibromo-3-Chloropropane	0.015	30.4

TABLE 3  
Initial & Continuing Calibrations  
(continued)

Analysis Date:	03/10/93
Associated Samples:	SW-1-08 (1:500), PW-5-08, SW-1-08, Method Blank-2,
Compound:	Continuing (RRF)
1,2-Dibromo-3-Chloropropane	0.019



## ICF TECHNOLOGY INCORPORATED

### DATA VALIDATION REPORT

SITE: ITT Aerospace (ICF Project No. 03827-011-00)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: Total Recoverable Petroleum Hydrocarbons by USEPA Method 418.1  
MATRIX: Waters  
DATE: June 4, 1993

#### I. INTRODUCTION:

Converse Envirolab (Pasadena) received two water samples for total recoverable petroleum hydrocarbon (TRPH) analysis by USEPA Method 418.1 on March 3 and 5, 1993. The samples were extracted and analyzed for TRPH by infrared spectrophotometry (IR) on March 11, 1993.

The ICF sample numbers are SW-1-08 (Envirolab sample number 93-03-153-02) and PW-3-08 (93-03-140-02).

The analytical results with qualifications are presented in Table 1A. Definitions of data qualifiers are provided in Table 1B. The practical quantitation limit of the target analyte is listed in Table 2.

This report was prepared according to the USEPA draft document "National Functional Guidelines For Organic Data Review", December, 1990 and USEPA Method 418.1.

#### II. VALIDITY and COMMENTS:

##### A. Technical Holding Times:

A.1 The project chain-of custody (COC) was not submitted for review. Based upon supporting project documentation, extraction and analytical holding time QC criteria were met for all TRPH analyses.

##### B. Initial Calibration:

B.1 Initial calibration QC criteria were met for all TRPH analyses.

##### C. Continuing Calibrations:

C.1 Calibration verification QC criteria were met for all TRPH analyses.

- D. Analyte Present Below the Quantitation Limit:  
D.1 Target analytes detected below the reported practical quantitation limit (PQL) were not included in the laboratory report for this method.
- E. Blanks:  
E.1 The target analyte was not detected in the solvent blank above the PQL the results are considered acceptable.
- F. Surrogate Recovery:  
F.1 There were no surrogate spike compounds included in the project TRPH analyses.
- G. Matrix Spike/Matrix Spike Duplicate Analysis:  
G.1 There were no TRPH matrix spike/duplicate spike (MS/MSD) data associated with the above noted samples. A "method spike" analysis was performed by the laboratory with acceptable recoveries.
- H. Quantitation and Identification:  
H.1 No problems were encountered with target analyte identification or quantitation in the TRPH analyses.
- I. System Performance:  
I.1 There were no problems with system performance observed in this data set.
- J. Conclusion:  
J.1 All data are considered valid and usable for all purposes.



## ANALYTICAL RESULTS

TABLE 1A

PROGRAM: ITT Aerospace/Burbank (ICF 03827-011-00)  
 LABORATORY: Converse Envirolab (Pasadena)  
 REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
 DATE: June 4, 1993

Analysis Type: Water Samples for Total  
 Recoverable Petroleum  
 Hydrocarbons (TRPH) by  
 USEPA Method 418.1

Concentration in mg/L

ICF Sample I.D. Envirolab Sample I.D. Date of Collection	SW-1-08 93-03-153-02 03/04/92			PW-3-08 93-03-140-02 03/02/92			Method Blank-1 MB-1 NA			Practical Quantitation Limit (PQL)					
Total Recoverable Petroleum Hydrocarbons	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
TRPH	120			0.8			0.2 U			0.2					

ICF Sample I.D. Envirolab Sample I.D. Date of Collection															
Total Recoverable Petroleum Hydrocarbons	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com

Val-Validity (refer to Data Qualifiers in Table 1B).

Com.-Comments (refer to corresponding section in the Narrative for each letter).

NA- Not Applicable

TABLE 1B  
DATA QUALIFIERS

NO QUALIFIERS indicates that the data are acceptable both qualitatively and quantitatively.

- U Indicates that the compound is not detected above the concentration listed.
- J Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable.
- N Presumptive evidence of the presence of the material. The compound identification is considered to be tentative. The data are usable for limited purposes.
- R Results are rejected and data are invalid for all purposes.

TABLE 2  
Sample Quantitation Limits

SITE: ITT Aerospace (ICF Project No. 03827-011-00)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: Total Recoverable Petroleum Hydrocarbons (TRPH) by  
USEPA Method 418.1  
MATRIX: Waters  
DATE: June 4, 1993

<u>Total Recoverable Petroleum Hydrocarbons</u>	<u>Units, mg/L</u>	<u>Q</u>	<u>C</u>
TRPH	0.2		

Q - Qualifier  
C - Comment

To calculate the sample quantitation limits, multiply practical quantitation limit (PQL) by the following factors:

<u>Sample No.</u>	<u>TRPH</u>
All samples	1.0
Method Blank-1	1.0



## ICF TECHNOLOGY INCORPORATED

### DATA VALIDATION REPORT

SITE: ITT Aerospace (ICF Project No. 03827-011-01)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: Diesel Fuel by LUFT Methodology (Modified USEPA Method 8015)  
MATRIX: Waters  
DATE: June 9, 1993

#### I. INTRODUCTION:

Converse Envirolab (Pasadena) received two water samples for diesel fuel analysis by the California Department of Health Services (CDHS) LUFT Methodology (Modified USEPA Method 8015) on March 3 and 5, 1993. The samples were analyzed for diesel fuel by gas chromatography with flame-ionization detection (GC/FID) on March 10 and 11, 1993.

The ICF sample numbers are SW-1-08 (Envirolab sample number 93-03-153-02) and PW-3-08 (93-03-140-02).

The analytical results with qualifications are presented in Table 1A. Definitions of data qualifiers are provided in Table 1B. The practical quantitation limit of the target analyte is provided in Table 2.

This report was prepared according to the USEPA document "National Functional Guidelines For Organic Data Review", December, 1990 and the CDHS LUFT document, May 1988.

#### II. VALIDITY and COMMENTS:

##### A. Technical Holding Times:

A.1 The project chain-of-custody (COC) was not submitted for review. Based upon supporting project documentation, extraction and analytical holding time QC criteria were met for all diesel analyses.

##### B. Initial Calibration:

B.1 Initial calibration QC criteria were met for all diesel analyses.

##### C. Continuing Calibrations:

C.1 Due to lack of calibration verification data representative of instrument conditions at the time of target analyte quantitation, the following result is qualified as estimated ("J"):

- Sample number SW-1-08

According to project data, the above noted sample was analyzed approximately twenty-hours past the last demonstrable calibration verification. Therefore, the result indicated above is considered estimated and usable for limited purposes.

C.2 All other continuing calibration QC criteria were met for project sample analyses.

D. Analyte Present Below the Quantitation Limit:

D.1 Due to the absence of a low concentration calibration standard representative of the reported practical quantitation limit (PQL), the following result and quantitation limit are qualified as estimated ("J"):

- Sample number PW-3-08 and Method Blank-1

The PQL reported by the laboratory was 100 ppb, apparently based on "historical" analyses of 20 ppm reference standards. However, the laboratory employed only 500 ppm low concentration calibration standards for the diesel analyses involving these project samples, allowing analytical justification for a PQL of 2500 ppb. Since no data has been submitted from these 20 ppm standard injections for review, the results indicated above are considered estimated and usable for limited purposes.

E. Blanks:

E.1 There were no sample data available for the method ("preparation") blank analysis. According to the supporting documentation, the target analyte was not detected in the method blank above the reported PQL.

F. Surrogate Recovery:

F.1 There were no surrogate spike compounds included in the diesel fuel analyses.

G. Matrix Spike/Matrix Spike Duplicate Analysis:

G.1 There were no diesel fuel matrix spike/matrix spike duplicate (MS/MSD) data associated with the above noted samples.

G.2 The laboratory QA/QC report indicates that a diesel fuel "method spike" (spiked laboratory reagent water) was analyzed on March 10, 1992 with acceptable percent recoveries. However, there are no sample data provided with analytical results for review.

H. Quantitation and Identification:

H.1 According to project data, the actual data of analysis for sample number SW-1-08 was March 11, 1992. This date differs from that provided in the laboratory report and this should be noted.

H.2 No other problems were observed with analyte identification or quantitation in the diesel fuel analyses.

I. System Performance:

I.1 No problems with system performance were observed in this data set.

J. Conclusion:

J.1 Due to the above noted calibration deficiencies, all data are considered estimated and usable for limited purposes.

## ANALYTICAL RESULTS

TABLE 1A

PROGRAM: ITT Aerospace/Burbank (ICF 03827-011-01)  
 LABORATORY: Converse Envirolab (Pasadena)  
 REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
 DATE: June 9, 1993

Analysis Type: Water Samples For Diesel  
 Fuel by LUFT Methodology  
 (Modified USEPA Method 8015)

Concentration in ug/L

ICF Sample ID Envirolab Sample I.D. Date of Collection	SW-1-08 93-03-153-02 03/04/93			PW-3-08 93-03-140-02 03/02/93			Method Blank-1 MB-1 NA			Practical Quantitation Limit (PQL)								
Petroleum Hydrocarbons	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Diesel Fuel	230000	J	C	860	J	D	100	U	J	D	100	J	D					

ICF Sample ID Envirolab Sample I.D. Date of Collection																		
Petroleum Hydrocarbons	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com

Val-Validity (refer to data qualifiers in Table 1B).

Com.-Comments (refer to the corresponding section in the Narrative for each letter).

NA-Not Applicable

TABLE 1B  
DATA QUALIFIERS

NO QUALIFIERS indicates that the data are acceptable both qualitatively and quantitatively.

- U Indicates that the compound is not detected above the concentration listed.
- J Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable.
- N Presumptive evidence of the presence of the material. The compound identification is considered to be tentative. The data are usable for limited purposes.
- R Results are rejected and data are invalid for all purposes.



TABLE 2  
Sample Quantitation Limits

SITE: ITT Aerospace (ICF Project No. 03827-011-01)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: Diesel Fuel by LUFT Methodology (Modified USEPA Method 8015)  
MATRIX: Waters  
DATE: June 9, 1993

<u>Petroleum Hydrocarbons</u>	<u>Units, ug/L</u>	<u>Q</u>	<u>C</u>
Diesel Fuel	100	J	D

Q - Qualifier  
C - Comment

To calculate the sample quantitation limits, multiply practical quantitation limit (PQL) by the following factors:

<u>Sample No.</u>	<u>Diesel Fuel</u>
SW-1-08	25
PW-3-08	1
Method Blank-1	1



## ICF TECHNOLOGY INCORPORATED

### DATA VALIDATION REPORT

SITE: ITT Aerospace (ICF Project No. 03827-011-00)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: PCBs by USEPA Method 8080 (SW-846)  
MATRIX: Water  
DATE: June 9, 1993

#### I. INTRODUCTION:

Converse Envirolab (Pasadena) received one water sample for polychlorinated biphenyl (PCB) analysis by USEPA Method 8080 on March 3, 1993. The sample was extracted on March 9, 1993 and analyzed for PCBs by gas chromatography with electron capture detection (GC/ECD) on March 13, 1993.

The ICF sample number is PW-3-08 (Envirolab sample number 93-03-140-02).

The analytical results with qualifications are presented in Table 1A. Definitions of data qualifiers are provided in Table 1B.

This report was prepared according to the USEPA draft document "National Functional Guidelines For Organic Data Review," December, 1990 and USEPA Method 8080 (SW-846).

#### II. VALIDITY and COMMENTS:

##### A. Technical Holding Times:

A.1 The project chain-of-custody (COC) was not submitted for review. Based upon supporting project documentation, extraction and analytical holding time QC criteria were met for all project sample analyses.

##### B. Initial Calibration:

B.1 According to the data provided, all target analytes (Aroclors 1016, 1221, 1232, 1242, 1248, 1254 and 1254) were associated with a three-point initial calibration curve. USEPA Method 8080 requires that five analytical standards with varying concentrations be employed for the initial calibration sequence.

B.2 Due to the absence of calibration data preceding or immediately following project sample analysis, all data are qualified as estimates ("J"). According to the data provided, project sample analyses were conducted on March 13, 1993 while

initial calibration of the system was performed on March 17, 1993. Moreover, there were no continuing calibration verification data submitted as well. Hence, due to this lack of demonstrated system response at or near the time of sample analysis, all data are considered usable for limited purposes only.

C. Continuing Calibrations:

C.1 There were no continuing calibration verification data submitted with project analytical data (see comment B).

D. Analyte Present Below the Quantitation Limit:

D.1 Quantitation limits provided by the laboratory for all target analytes could not be statistically supported based on submitted low concentration standard information included with the initial calibration data. Hence, project quantitation limits have been adjusted according to demonstrated system responses (see Table 1A).

D.2 No target analytes were detected in the samples below the adjusted quantitation limits.

E. Blanks:

E.1 Due to the lack of project information provided, method blank data cited could not be conclusively verified as being associated with the same extractions batch as the project sample.

E.2 No target analytes were detected in the submitted method blank above the reported quantitation limits and the results are considered acceptable.

F. Surrogate Recovery:

F.1 Surrogate recovery QC criteria were met for the project sample analyses.

G. Matrix Spike/Matrix Spike Duplicate Analyses:

G.1 There were no PCB matrix spike/matrix spike duplicate (MS/MSD) data associated with the above noted project sample.

G.2 A PCB "method spike" and "method spike duplicate" were analyzed on March 13, 1993 with acceptable percent recoveries.

H. Quantitation and Identification:

H.1 No problems were encountered with analyte identification or quantitation in the project sample analyses.

I. System Performance:

I.1 No problems with system performance were noted in the project sample analyses.

J. Conclusion:

J.1 Noting the calibration deficiencies referenced above as well as those adjustments made by the reviewer to project quantitation limits, all data are considered estimated and are usable for limited purposes.

## TABLE 1A

Analysis Type: Water Sample For PCBs  
Analysis by USEPA Method  
8080 (SW-846)

Concentration in ug/L

[illegible]

Val-Validity (refer to Data Qualifiers in Table 1B).

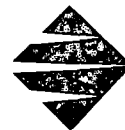
Com.-Comments (refer to the corresponding section in the Narrative for each letter).

NA-Not Applicable

TABLE 1B  
DATA QUALIFIERS

NO QUALIFIERS indicates that the data are acceptable both qualitatively and quantitatively.

- U Indicates that the compound is not detected above the concentration listed.
- J Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable.
- N Presumptive evidence of the presence of the material. The compound identification is considered to be tentative. The data are usable for limited purposes.
- R Results are rejected and data are invalid for all purposes.



## ICF TECHNOLOGY INCORPORATED

### DATA VALIDATION REPORT

SITE: ITT Aerospace (ICF Project No. 03827-011-00)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: Metals by USEPA Method 6010  
MATRIX: Waters  
DATE: June 9, 1993

#### I. INTRODUCTION:

Converse Envirolab (Pasadena) received two water samples for metals analyses by USEPA Method 6010 on March 3 and 4, 1993. The samples were analyzed by inductively coupled plasma-atomic emission spectroscopy (ICP) on March 10, 1993. Nickel and chromium were the specific metals of interest.

The ICF sample numbers are PW-5-08 (Envirolab sample number 93-03-144-03) and PW-6-08 (93-03-140-01).

The analytical results with qualifications are listed in Table 1A. Definitions of the data qualifiers are provided in Table 1B. This report was prepared in accordance with the USEPA draft document "Laboratory Data Validation Functional Guidelines For Evaluating Inorganic Analyses," October, 1989 and USEPA Method 6010.

#### II. VALIDITY and COMMENTS:

##### A. Technical Holding Times:

A.1 The project chain-of-custody (COC) was not submitted for review. Based upon supporting project documentation, technical holding time QC criteria were met for all project sample analyses.

##### B. Initial Calibration:

B.1 Initial calibration QC criteria were met for all project sample analyses.

##### C. Continuing Calibration:

C.1 Continuing calibration QC criteria were met for all project sample analyses.

##### D. Interference Check Samples:

D.1 Interference check sample QC criteria were met for all project sample analyses.

E. Laboratory Blanks:

E.1 The results for the associated method ("preparation") blank analysis were below all applicable method detection limits and are considered acceptable.

F. Matrix Spike/Laboratory Duplicate Analyses:

F.1 Project sample number PW-5-08 was employed for the matrix spike (MS) analysis submitted with this project. The results for the MS analysis were within all applicable QC criteria and are considered acceptable.

F.2 Both above noted project samples were employed for the duplicate (DUP) analyses submitted with this project. The results for the DUP analyses were within all applicable QC criteria and are considered acceptable.

G. Quantitation and Identification:

G.1 Analytical methods cited by the laboratory in the project reports appear incorrect. Although USEPA Methods 7520 and 7190 (atomic absorption) were referenced for the nickel and chromium analyses respectively, USEPA Method 6010 (ICP) data was submitted to support all reported results. This discrepancy should be noted and the reports amended where appropriate.

G.2 No other problems were observed with analyte quantitation or identification.

H. Conclusion:

H.1 All data are considered valid and usable for all purposes.

## TABLE 1A

Analysis Type: Low Concentration Water  
Samples for Metals  
by USEPA Method 6010

Concentration in mg/L

[illegible]

**Val-Validity** (refer to data qualifiers in Table 1B).

Com.-Comments (refer to the corresponding section in the Narrative for each letter).

NA-Not Applicable



TABLE 1B  
DATA QUALIFIERS

NO QUALIFIER indicates that the data are acceptable both qualitatively and quantitatively.

- U Indicates that the parameter is not detected above the concentration listed. (Usually the Instrument Detection Limit for waters and the Method Detection Limit for soils with a correction for percent solids).
- L Indicates results which fall between the Instrument Detection Limit for waters or the Method Detection Limit for soils and the Contract Required Detection Limit. Results are considered estimates and usable for limited purposes.
- J Results are considered estimates and are usable for limited purposes. The results are qualitatively acceptable.
- R Results are rejected and are unusable for any purpose.



## ICF TECHNOLOGY INCORPORATED

### DATA VALIDATION REPORT

SITE: ITT Aerospace (ICF Project No. 03827-011-00)  
LABORATORY: Converse Envirolab (Pasadena)  
REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
ANALYSIS: Hexavalent Chromium by Standard Method 3500-Cr D  
MATRIX: Waters  
DATE: June 4, 1993

#### I. INTRODUCTION:

Converse Envirolab (Pasadena) received two water samples on March 3 and 4, 1993 for hexavalent chromium analyses by Standard Method 3500-Cr D. The samples were analyzed colorimetrically by Converse on March 3 and 4, 1993.

The ICF sample numbers are PW-5-08 (Envirolab sample number 93-03-144-03) and PW-6-08 (93-03-140-01).

The analytical results with qualifications are presented in Table 1A. Definitions of data qualifiers are listed in Table 1B. This report was prepared in accordance with the USEPA draft document "Laboratory Data Validation Functional Guidelines For Evaluating Inorganic Analyses," October, 1989 and Standard Method 3500-Cr D.

#### II. VALIDITY and COMMENTS:

##### A. Sample Holding Times:

A.1 Analytical holding time QC criteria were met for all hexavalent chromium analyses.

##### B. Initial Calibration:

B.1 Initial calibration QC criteria were met for all hexavalent chromium analyses.

##### C. Continuing Calibration Verifications:

C.1 Continuing calibration QC criteria were met for all hexavalent chromium analyses.

##### D. Laboratory Blanks:

D.1 The target analyte was not detected in the associated method blank analyses above the practical quantitation limit (PQL) and the results are considered acceptable.

E. Matrix Spike/Laboratory Duplicate Analyses:

E.1 The results for the associated matrix spike (MS) analysis were within all applicable QC criteria and are considered acceptable. Note: these results do not appear in the laboratory QA/QC report.

F. Quantitation and Identification:

F.1 No problems were reported with analyte quantitation or identification.

G. Conclusion:

G.1 All data are considered valid and usable for all purposes.

## ANALYTICAL RESULTS

TABLE 1A

PROGRAM: ITT Aerospace/Burbank (ICF 03827-011-00)  
 LABORATORY: Converse Envirolab (Pasadena)  
 REVIEWER: Roy Roenbeck, ICF Technology, Inc.  
 DATE: June 4, 1993

Analysis Type: Low Concentration Water Samples  
 For Hexavalent Chromium by  
 Standard Method 3500-Cr D

Concentration in mg/L

ICF Sample ID Envirolab Sample I.D. Date of Collection	PW-5-08 93-03-144-03 03/03/93			PW-6-08 93-03-140-01 03/02/92			Method Blank-1 MB-1 NA			Practical Quantitation Limit (PQL)					
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Hexavalent Chromium	1.4			0.01 U			0.01 U			0.01					

ICF Sample ID Envirolab Sample I.D. Date of Collection															
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com

Val-Validity (refer to Data Qualifiers in Table 1B).

Com.-Comments (refer to corresponding section in the Narrative for each letter).

NA-Not Applicable

TABLE 1B  
DATA QUALIFIERS

NO QUALIFIER indicates that the data are acceptable both qualitatively and quantitatively.

- U Indicates that the parameter is not detected above the concentration listed. (Usually the Instrument Detection Limit for waters and the Method Detection Limit for soils with a correction for percent solids).
- L Indicates results which fall between the Instrument Detection Limit for waters or the Method Detection Limit for soils and the Contract Required Detection Limit. Results are considered estimates and usable for limited purposes.
- J Results are considered estimates and are usable for limited purposes. The results are qualitatively acceptable.
- R Results are rejected and are unusable for any purpose.

## **APPENDIX D**

# **HYDROPUNCH ANALYTICAL DATA**

APPENDIX D  
HYDROPUNCH ANALYTICAL RESULTS FOR VOCs

GROUND WATER SAMPLE ID	DATE SAMPLED	Chloro- form	1,1-Di- chloroethane (1,1 DCA)	1,1-Di- chloroethene (1,1 DCE)	Tetrachloro ethene (PCE)	1,1,1- Trichloro- ethane	Trichloro- ethene (TCE)	Other Peaks		TOTAL VOCs
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		ug/l
WSB2-1-HP	2/5/91	ND	ND	ND	ND	ND	3,900	ND		3,900
WSB2-2-HP	2/22/91	ND	ND	ND	ND	ND	9,580	ND		9,580
WSB2-3-HP	2/28/91	ND	ND	ND	ND	ND	16,700	ND		16,700
WSB2-4-HP	3/1/91	ND	ND	ND	ND	ND	12,900	ND		12,900
WSB3-1-HP	2/6/91	ND	ND	340	ND	ND	6,600	90		7,030
WSB3-2-HP	2/6/91	ND	ND	600	ND	15,800	15,800	45		32,245
WSB3-3-HP	2/7/91	ND	ND	1,800	ND	2,900	18,700	ND		23,400
WSB3-4-HP	2/20/91	ND	90	ND	ND	ND	2,500	ND		2,590
WSB3-5-HP	2/21/91	ND	ND	ND	ND	ND	1,900	ND		1,900
WSB3-5-HPD	2/21/91	ND	ND	ND	ND	ND	2,300	ND		2,300
WSB3-6-HP	2/21/91	ND	ND	98	ND	ND	930	ND		1,028
WSB3-7-HP	2/25/91	29	32	3,680	25	83	8,140	ND		11,989
WSB3-8-HP	2/27/91	ND	ND	ND	ND	6,040	ND	ND		6,040
WSB3-9-HP	3/13/91	ND	ND	ND	ND	3,840	15,300	ND		19,140
WSB3-10-HP	3/11/91	ND	46	432	66	200	847	ND		1,591
WSB3-10-HPD	3/11/91	ND	55	521	70	219	1,040	ND		1,905
WSB3-11-HP	3/14/91	ND	ND	66	57	335	157	ND		615
WSB4-1-HP	2/8/91	ND	ND	ND	ND	ND	2,100	ND		2,100
WSB4-1-HPD	2/8/91	ND	ND	ND	ND	ND	2,000	ND		2,000

ND: Compound not detected.

## **APPENDIX E**

# **GROUNDWATER ANALYTICAL RESULTS FOR MINERALS, METALS AND INORGANICS**



# APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics

WELL	DATE SAMPLED	pH	Specific Conductivity	TDS	Turbidity	BOD-5	COD	TOC	Minerals			
									Bicarbonate Alkalinity	Carbonate Alkalinity	Total Alkalinity as CaCO3	Ca Hardness as CaCO3
			umhos/cm	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PW-1-01	3/18/91	7.9	1,200	814	-	-	-	-	-	-	362	-
PW-1D-01	3/18/91	-	-	-	-	-	-	-	-	-	-	-
PW-1-03	11/14/91	7.8	900	750	7.2	-	-	-	-	-	-	-
PW-1-04	3/05/92	7.3	1,000	810	250	ND	20	95	320	ND	320	400
PW-1-05	6/02/92	7.3 F	1,400 F	-	110	-	-	-	-	-	-	-
PW-1-06	8/18/92	7.2 F	1,040 F	-	37	-	-	-	-	-	-	-
PW-1-07	11/23/92	7.1 F	1,200 F	-	96	-	-	-	-	-	-	-
PW-1-08	3/05/93	6.7 F	1,200 F	-	40	-	-	-	-	-	-	-
PW-1-09	6/08/93	7.1 F	1,430 F	-	9	-	-	-	-	-	-	-
PW-2-01	3/15/91	6.9	1,130	703	-	-	-	-	-	-	555	-
PW-2D-01	3/15/91	-	-	-	-	-	-	-	-	-	-	-
PW-2-03	11/14/91	6.9	990	700	160	-	-	-	-	-	-	-
PW-2-04	3/04/92	6.9	1,000	720	16	54	40	174	650	ND	650	240
PW-2-05	6/03/92	6.2 F	1,140 F	-	69	-	-	-	-	-	-	-
PW-2-06	8/19/92	6.2 F	940 F	-	21	-	-	-	-	-	-	-
PW-2-07	11/20/92	6.1 F	1,130 F	-	8.5	-	-	-	-	-	-	-
PW-2D-07	11/20/92	-	-	-	8.5	-	-	-	-	-	-	-
PW-2-08	3/04/93	7.3 F	1250 F	-	92	-	-	-	-	-	-	-
PW-2-09	6/10/93	6.4 F	1,060 F	-	100	-	-	-	-	-	-	-
PW-3-01	3/19/91	7.1	1,240	771	-	-	-	-	-	-	686	-
PW-3AB-01	3/19/91	-	-	-	-	-	-	-	-	-	-	-
PW-3-03	11/15/91	7.2	980	750	ND	-	-	-	-	-	-	-
PW-3-04	3/03/92	6.9	1,200	770	0.6	ND	60	184	730	ND	730	400
PW-3-05	6/02/92	7.0 F	1,400 F	-	0.2	-	-	-	-	-	-	-
PW-3-06	8/19/92	7.2 F	1,200 F	-	0.4	-	-	-	-	-	-	-
PW-3-07	11/20/92	6.5 F	1,330 F	-	2.8	-	-	-	-	-	-	-
PW-3-08	3/02/93	8.3 F	1,680 F	-	22	-	-	-	-	-	-	-
PW-3-09	6/11/93	7.2 F	1,400 F	-	2.3	-	-	-	-	-	-	-
PW-4-01	3/15/91	7.4	1,200	904	-	-	-	-	-	-	224	-
PW-4D-01	3/15/91	-	-	-	-	-	-	-	-	-	-	-
PW-4-03	11/21/91	6.6	1,000	800	31	-	-	-	-	-	-	-
PW-4-04	3/05/92	7.5	1,000	820	280	ND	20	63	250	ND	250	380
PW-4-05	6/03/92	7.1 F	1,150 F	-	275	-	-	-	-	-	-	-
PW-4-06	8/19/92	7.9 F	980 F	-	120	-	-	-	-	-	-	-
PW-4-07	11/18/92	6.4 F	1,000 F	-	46	-	-	-	-	-	-	-
PW-4D-07	11/18/92	-	-	-	-	-	-	-	-	-	-	-
PW-4-08	3/03/93	7.6 F	1170 F	-	62	-	-	-	-	-	-	-
PW-4D-08	3/03/93	-	-	-	62	-	-	-	-	-	-	-
PW-4-09	6/09/93	6.8 F	990 F	-	43	-	-	-	-	-	-	-

# APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics

									Minerals			
WELL	DATE SAMPLED	pH	Specific Conductivity	TDS	Turbidity	BOD-5	COD	TOC	Bicarbonate Alkalinity	Carbonate Alkalinity	Total Alkalinity as CaCO3	Ca Hardness as CaCO3
			umhos/cm	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PW-5-03	11/21/91	5.6	670	500	9.5	-	-	-	-	-	-	-
PW-5-04	3/06/92	5.8	700	610	220	ND	ND	53	60	ND	60	160
PW-5-05	6/03/92	5.6 F	950 F	-	110	-	-	-	-	-	-	-
PW-5-06	8/19/92	6.0 F	700 F	-	170	-	-	-	-	-	-	-
PW-5-07	11/20/92	5.3 F	740 F	-	73	-	-	-	-	-	-	-
PW-5-08	3/03/93	5.5 F	850 F	-	18.5	-	-	-	-	-	-	-
PW-5-09	6/11/93	5.2 F	850 F	-	67	-	-	-	-	-	-	-
PW-5D-09	6/11/93	5.2 F	850 F	-	54	-	-	-	-	-	-	-
PW-6-01	3/18/91	7.5	1,150	67	-	-	-	-	-	-	248	-
PW-6D-01	3/18/91	-	-	-	-	-	-	-	-	-	-	-
PW-6-03	11/14/91	7.3	900	600	410	-	-	-	-	-	-	-
PW-6-04	3/05/92	7.5	1,000	750	26	ND	ND	70	285	ND	285	350
PW-6-05	6/02/92	7.0 F	1,000 F	-	51	-	-	-	-	-	-	-
PW-6-06	8/19/92	7.8 F	930 F	-	39	-	-	-	-	-	-	-
PW-6-07	11/20/92	6.8 F	960 F	-	11	-	-	-	-	-	-	-
PW-6-08	3/02/93	7.7 F	1210 F	-	8.2	-	-	-	-	-	-	-
PW-6-09	6/08/93	7.0 F	1,000 F	-	28	-	-	-	-	-	-	-
PW-6D-09	6/08/93	7.0 F	1,000 F	-	-	-	-	-	-	-	-	-
SW-1-03	11/21/91	6.3	960	800	2.0	-	-	-	-	-	-	-
SW-1D-03	11/21/91	-	-	-	1.8	-	-	-	-	-	-	-
SW-1-04	3/04/92	6.4	1,200	970	42	ND	90	72	175	ND	175	330
SW-1-05	6/03/92	6.0 F	1,550 F	-	13	-	-	-	-	-	-	-
SW-1D-05	6/03/92	6.0 F	1,550 F	-	33	-	-	-	-	-	-	-
SW-1-06	8/20/92	5.9 F	1,300 F	-	2.7	-	-	-	-	-	-	-
SW-1-07	11/19/92	6.0 F	1,100 F	-	4.6	-	-	-	-	-	-	-
SW-1-08	3/04/93	6.4 F	1,410 F	-	170	-	-	-	-	-	-	-
SW-1-09	6/10/93	5.9 F	1,190 F	-	420	-	-	-	-	-	-	-
SW-2-03	11/15/91	5.9	770	630	ND	-	-	-	-	-	-	-
SW-2-04	3/06/92	5.6	1,000	740	54	ND	24	113	75	ND	75	190
SW-2D-04	3/06/92	5.6	1,000	750	87	ND	ND	98	45	ND	45	190
SW-2-05	6/04/92	5.3 F	1,700 F	-	77	-	-	-	-	-	-	-
SW-2-06	8/20/92	5.8 F	1,700 F	-	57	-	-	-	-	-	-	-
SW-2D-06	8/20/92	-	-	-	56	-	-	-	-	-	-	-
SW-2-07	11/19/92	5.8 F	1,280 F	-	25	-	-	-	-	-	-	-
SW-2-08	3/04/93	5.8 F	1,610 F	-	23	-	-	-	-	-	-	-
SW-2-09	6/10/93	6.3 F	1,570 F	-	74	-	-	-	-	-	-	-

Notes: ND: Not detected.  
 (-) indicates not analyzed.  
 F: pH and conductivity measured in the field.

Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-05.

## APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics (Cont.)

[illegible]

# APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics (Cont.)

Minerals (continued)												
WELL	Mg Hardness as CaCO3	Total Hardness	Aluminum	Bromide	Calcium	Chloride	Copper	Fluoride	Iron	Magnesium	Manganese	MBAS
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PW-5-03	-	-	-	ND	-	76	-	ND	-	-	-	-
PW-5-04	78	240	3.0	-	62	73	ND	8.9	ND	19	0.77	ND
PW-5-05	-	-	-	-	-	-	-	-	-	-	-	-
PW-5-06	-	-	-	-	-	-	-	-	-	-	-	-
PW-5-07	-	-	-	-	-	-	-	-	-	-	-	-
PW-5-08	-	-	-	-	-	-	-	-	-	-	-	-
PW-5-09	-	-	-	-	-	-	-	-	-	-	-	-
PW-5D-09	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-01	-	-	-	-	124	-	-	-	0.04	37	0.06	-
PW-6D-01	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-03	-	-	-	90	-	0.3	-	ND	-	-	-	-
PW-6-04	160	510	0.15	-	140	89	ND	0.33	ND	38	0.09	ND
PW-6-05	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-06	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-07	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-08	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-09	-	-	-	-	-	-	-	-	-	-	-	-
PW-6D-09	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-03	-	-	-	ND	-	95	-	ND	-	-	-	-
SW-1D-03	-	-	-	ND	-	95	-	ND	-	-	-	-
SW-1-04	140	500	3.7	-	130	97	ND	14.3	ND	42	2.7	0.15
SW-1-05	-	-	-	-	-	-	-	-	-	-	-	-
SW-1D-05	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-06	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-07	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-08	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-09	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-03	-	-	-	ND	-	120	-	4.3	-	-	-	-
SW-2-04	120	310	2.6	-	74	130	ND	4.1	ND	29	2.3	0.1
SW-2D-04	120	310	2.3	-	74	130	ND	4.1	ND	29	2.3	0.03
SW-2-05	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-06	-	-	-	-	-	-	-	-	-	-	-	-
SW-2D-06	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-07	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-08	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-09	-	-	-	-	-	-	-	-	-	-	-	-

Notes: ND: Not detected.  
 (-) indicates not analyzed.  
 F: pH and conductivity measured in the field.

Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-05.

## APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics (Cont.)

[illegible]

**APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics (Cont.)**

Minerals (Continued)									CAC Metals				
WELL	Nitrate (as N)	Nitrate (as NO3)	Nitrite (as NO2)	Ammonia	Phosphate	Potassium	Sodium	Sulfate	Antimony	Arsenic	Barium	Beryllium	Cadmium
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PW-5-03	15	65	ND	-	ND	-	-	170	-	-	-	-	-
PW-5-04	18	79	-	-	ND	17	81	160	ND	ND	0.04	ND	ND
PW-5-05	15	65	ND	1.1	-	-	-	-	-	-	-	-	-
PW-5-06	16	72	ND	0.75	-	-	-	-	-	-	-	-	-
PW-5-07	18	79	ND	ND	-	-	-	-	-	-	-	-	-
PW-5-08	19	75	ND	1.5	-	-	-	-	-	-	-	-	-
PW-5-09	-	17	ND	1.8	-	-	-	-	-	-	-	-	-
PW-5D-09	-	18	ND	2.1	-	-	-	-	-	-	-	-	-
PW-6-01	-	-	-	-	-	-	61.2	-	-	-	0.14	-	-
PW-6D-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-03	ND	ND	ND	-	ND	-	-	180	-	-	-	-	-
PW-6-04	ND	ND	-	-	ND	36	47	180	ND	ND	0.17	ND	ND
PW-6-05	3.6	16	ND	ND	-	-	-	-	-	-	-	-	-
PW-6-06	3.6	16	ND	ND	-	-	-	-	-	-	-	-	-
PW-6-07	2.7	12	ND	ND	-	-	-	-	-	-	-	-	-
PW-6-08	-	-	-	ND	-	-	-	-	-	-	-	-	-
PW-6-09	-	2.6	ND	0.11	-	-	-	-	-	-	-	-	-
PW-6D-09	-	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-03	9.7	43	ND	-	ND	-	-	230	-	-	-	-	-
SW-1D-03	9.7	43	ND	-	ND	-	-	230	-	-	-	-	-
SW-1-04	5.9	26	-	-	ND	40	100	350	ND	ND	0.05	ND	ND
SW-1-05	5.0	22	11	1.0	-	-	-	-	-	-	-	-	-
SW-1D-05	4.7	21	ND	1.0	-	-	-	-	-	-	-	-	-
SW-1-06	4.7	21	ND	0.93	-	-	-	-	-	-	-	-	-
SW-1-07	5.7	25	ND	ND	-	-	-	-	-	-	-	-	-
SW-1-08	9.0	40	ND	ND	-	-	-	-	-	-	-	-	-
SW-1-09	-	2.7	ND	5.3	-	-	-	-	-	-	-	-	-
SW-2-03	ND	ND	ND	-	ND	-	-	220	-	-	-	-	-
SW-2-04	ND	ND	-	-	ND	27	110	270	ND	ND	0.03	ND	ND
SW-2D-04	ND	ND	-	-	ND	27	110	280	ND	ND	0.03	ND	ND
SW-2-05	ND	ND	ND	1.3	-	-	-	-	-	-	-	-	-
SW-2-06	ND	ND	ND	1.7	-	-	-	-	-	-	-	-	-
SW-2D-06	ND	ND	ND	1.8	-	-	-	-	-	-	-	-	-
SW-2-07	0.6	2.9	ND	ND	-	-	-	-	-	-	-	-	-
SW-2-08	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-
SW-2-09	-	ND	ND	1.5	-	-	-	-	-	-	-	-	-

Notes: ND: Not detected.

(-) indicates not analyzed.

F: pH and conductivity measured in the field.

Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-05.

**APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics (Cont.)**

CAC Metals (continued)													
WELL	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PW-1-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-1D-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-1-03	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-1-04	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-1-05	0.23	ND	-	-	-	-	-	ND	-	-	-	-	-
PW-1-06	0.083	ND	-	-	-	-	-	0.04	-	-	-	-	-
PW-1-07	0.74	ND	-	-	-	-	-	0.16	-	-	-	-	-
PW-1-08	0.6	ND	-	-	-	-	-	0.07	-	-	-	-	-
PW-1-09	0.024	-	-	-	-	-	-	ND	-	-	-	-	-
PW-2-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2D-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2-03	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2-04	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-2-05	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2-06	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2-07	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2D-07	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2-08	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-2-09	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3AB-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3-03	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3-04	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
PW-3-05	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3-06	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3-07	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3-08	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-3-09	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-4-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-4D-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-4-03	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-4-04	ND	-	ND	ND	ND	ND	ND	0.34	ND	ND	ND	ND	ND
PW-4-05	2.0	ND	-	-	-	-	-	0.79	-	-	-	-	-
PW-4-06	0.95	ND	-	-	-	-	-	0.51	-	-	-	-	-
PW-4-07	0.26	ND	-	-	-	-	-	0.30	-	-	-	-	-
PW-4D-07	0.56	ND	-	-	-	-	-	0.47	-	-	-	-	-
PW-4-08	0.61	ND	-	-	-	-	-	0.54	-	-	-	-	-
PW-4D-08	1.0	ND	-	-	-	-	-	0.69	-	-	-	-	-
PW-4-09	0.3	ND	-	-	-	-	-	0.41	-	-	-	-	-

# APPENDIX E – Groundwater Analytical Results for Minerals, Metals and Inorganics (Cont.)

CAC Metals (continued)													
WELL	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PW-5-03	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-5-04	1.5	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-5-05	1.5	1.17	-	-	-	-	-	ND	-	-	-	-	-
PW-5-06	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-5-07	1.4	1.44	-	-	-	-	-	ND	-	-	-	-	-
PW-5-08	1.3	1.35	-	-	-	-	-	ND	-	-	-	-	-
PW-5-09	1.4	1.4	-	-	-	-	-	-	-	-	-	-	-
PW-5D-09	-	1.3	-	-	-	-	-	-	-	-	-	-	-
PW-6-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-6D-01	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-03	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-04	ND	-	ND	ND	ND	ND	ND	0.46	ND	ND	ND	ND	ND
PW-6-05	-	-	-	-	-	-	-	-	-	-	-	-	-
PW-6-06	0.26	ND	-	-	-	-	-	0.64	-	-	-	-	-
PW-6-07	0.09	ND	-	-	-	-	-	0.20	-	-	-	-	-
PW-6-08	0.033	ND	-	-	-	-	-	0.29	-	-	-	-	-
PW-6-09	0.087	-	-	-	-	-	-	0.39	-	-	-	-	-
PW-6D-09	0.084	-	-	-	-	-	-	0.38	-	-	-	-	-
SW-1-03	-	-	-	-	-	-	-	-	-	-	-	-	-
SW-1D-03	-	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-04	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SW-1-05	ND	ND	-	-	-	-	-	ND	-	-	-	-	-
SW-1D-05	ND	ND	-	-	-	-	-	ND	-	-	-	-	-
SW-1-06	ND	ND	-	-	-	-	-	0.06	-	-	-	-	-
SW-1-07	ND	ND	-	-	-	-	-	0.08	-	-	-	-	-
SW-1-08	-	-	-	-	-	-	-	-	-	-	-	-	-
SW-1-09	-	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-03	-	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-04	ND	-	ND	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND
SW-2D-04	ND	-	ND	0.03	0.008	ND	ND	ND	-	-	-	-	-
SW-2-05	ND	ND	-	-	-	-	-	ND	-	-	-	-	-
SW-2-06	ND	ND	-	-	-	-	-	0.04	-	-	-	-	-
SW-2D-06	ND	ND	-	-	-	-	-	0.04	-	-	-	-	-
SW-2-07	ND	ND	-	-	-	-	-	0.06	-	-	-	-	-
SW-2-08	-	-	-	-	-	-	-	-	-	-	-	-	-
SW-2-09	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: ND: Not detected.  
 (-) indicates not analyzed.  
 F: pH and conductivity measured in the field.

Samples labeled with a "D" are field duplicates. For example, SW-1D-05 is a duplicate of SW-1-05.